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Training infantry

John Frank Morrison

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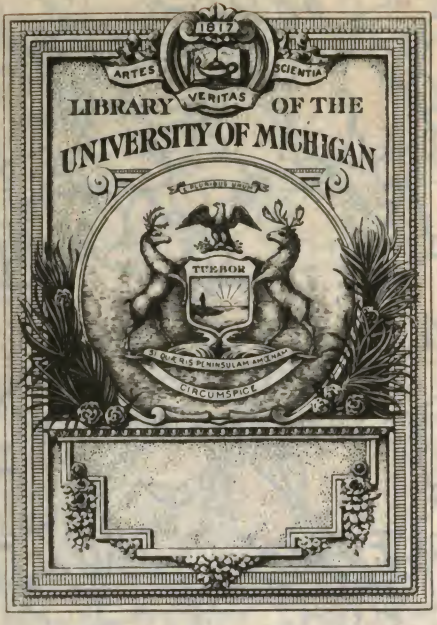

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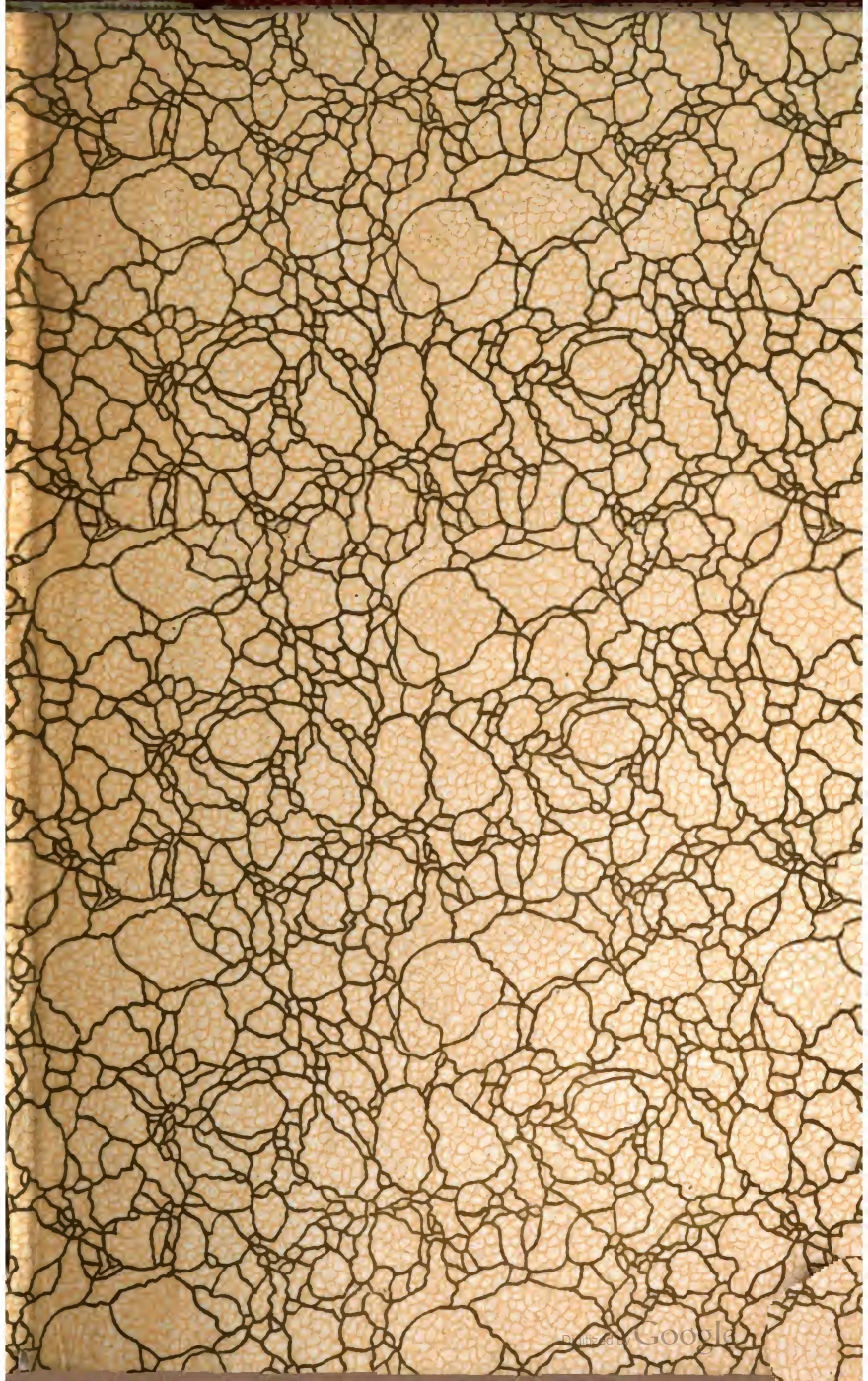
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TRAINING INFANTRY

BY
JOHN F. MORRISON
Colonel of Infantry

U. S. CAVALRY ASSOCIATION
Fort Leavenworth. Kansas
1914

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PREFACE

In my commissioned service of over thirty-three years I have spent over twenty-two years with my regiment and three years in training a battalion of college cadets. I have been intimately associated with the national guard of one state and have had experience with the guard of four other states. I have seen something of foreign troops in both peace and war. In these many years I have observed the methods of training employed by a number of officers.

Our infantry training has improved over what I first knew but there still exists in places a lack of completeness and system. Of late years a much greater interest than formerly has been taken in the tactical instruction and training of our officers and the progress has been marked. The tactician is, however, but the skilled mechanic; the tools with which he works are his troops. New recruits are like the lump of ore, of no use until converted into steel and then forged into shape. The making of this tool from the raw material is our principal business during peace.

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At the request of officers with whom I have often talked and corresponded on the subject of training infantry, this little book of suggestions has been prepared. It is based on my own experience and observation and what others have told me of their work. It is offered by an older officer to his younger brothers in the infantry in the hope that it may be of some service to them.

J. F. M.

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INTRODUCTION

Importance of training infantry

There is nothing more important to an army than the correct training of its infantry. The training of all the arms has much in common, but training infantry, owing to the manner of its use in battle, calls for much that is not required in the other arms.

The infantry soldier must work more independently than men in the other branches. He cannot be led or controlled as can men in groups or close formations; hence he needs to be more thoroughly instructed in the part he is to play. This instruction cannot be given him on the field of battle. The man who must steadily advance on an enemy in position requires not only higher training but higher discipline than one who does his fighting in close formation, or at long range and out of sight of the enemy and protected from hostile fire by steel shields.

The mere mechanical part of the drill of all the arms is not difficult as regards its execution on the peaceful drillground but it requires much training to carry out these same things on the battlefield.

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Importance of infantry training

It is reported as an incident in the recent Balkan War that a general of division, whose infantry had been reinforced by the addition of fifty per cent of recruits who had only received about a month's training, prepared for battle by sending all his new men to the rear, preferring to fight without them. His division was successful but the other divisions, which retained their new men in ranks during combat, broke and were routed.

War of today is not a game for amateurs. Infantry to be of any value has not only to be trained but to be properly and thoroughly trained. On the part of those in charge of this training there is necessary an appreciative understanding of the objects sought, earnest effort, tact, enthusiasm, and a real knowledge of men.

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I

THE ESSENTIAL AND THE DESIRABLE

KNOWLEDGE AND HABIT

Practice and theory

TO ensure the proper training of our infantry there are needed competent officers—officers who know what should be taught and how to teach it. One sometimes hears: "He is a good practical soldier but he knows nothing of the theory." Such an expression is an absurdity. A man may know the theory yet be unable to apply it or make practical use of it; we have all seen such men. But a man cannot practice what he does not know. The knowledge of theory required by the junior commander is not great and the time it takes to learn it is short compared with the time required to master its practical application and to instruct properly a command.

Needs of the unit commander

The first requisite for a unit commander is a knowledge of the fundamental principles of the tactics of his arm and its employment in combination with the other arms, especially with the artillery. He must have a clear

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Needs of the unit commander

conception of the modern battlefield in order to understand for what he must train his unit. He must train it for battle conditions, not peace conditions. A company trained to be handled exclusively by word of command, as in a close order drill on the parade ground, lacks the training that fits for battle.

Essential and desirable instruction

The more the enlisted men know of the art of war the better. Time is not available however, to teach them the whole art of war even if the men in ranks were capable of mastering it. The instructor must therefore clearly understand what are the things the men *must* know and what are merely *desirable* as additions to their training. Every effort should be spent and all available time devoted to first perfecting the men in the things they *must* know; afterwards, if more time is available, it is well to extend in other directions their education and training.

Under the first heading, *essentials*, the men must be taught their close order drill. This is necessary for two reasons: it renders possible the orderly movement of troops and it makes for discipline. So far as the orderly movement of troops is concerned very little is necessary but without precision close order drill is of no value towards dis-

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cipline. To have a disciplinary value, drill movements must be carried out with exactitude. Discipline is injured if, when an officer gives a command at drill, it is only carried out approximately; the soldier is acquiring the habit of slighting his work and of doing an approximation, not the precise duty demanded of him.

Close order drill

It takes but little longer to learn to execute correctly the few movements prescribed than to learn them incorrectly, but it requires constant attention on the part of the instructor to maintain exactness. The attention and effort required on the part of the instructor are, however, amply compensated by the results.

The men must know perfectly the mechanism of the extended order drill. A company must be able without confusion or mix-up to form line of skirmishers in the least possible time from any formation and facing in any direction. This will necessitate much practice. It does not take long to learn to form line of skirmishers quietly, from line or column of squads, facing to the front; but that is not sufficient.

Extended order drill

The men must know how to estimate distances, how to shoot, how to use the bayonet;

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Other essentials

they must understand patrolling and outpost duty, the construction of hasty intrenchments, the application of first aid, how to cook the ration and how to care for their arms and equipment.

Especially important is it that the men know how to march and how to care for themselves in the field. However well instructed a soldier may be he is of no use if at the time of battle he is back in the hospital.

Desirable instruction

Under the second heading, of things that it is desirable the men should know, are subjects which are essential for the officers to know but which are not equally essential for the men. Nevertheless it is an advantage to have them know as much as possible, provided the merely desirable instruction does not interfere with the proper training in essentials. Among these subjects are topography and the construction of temporary bridges; the list might be extended almost indefinitely.

Things to be understood and things to be made fixed habits

The instructor must further distinguish between the essential things which the men need merely to know or to understand and those which need to be practiced until they become habits. Those things the men will only be required to do off the battlefield,

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where they will have time to think and be in condition to use their heads, need only be known.

Things to be understood and things to be made fixed habits

Psychology teaches us that under great stress of danger and excitement a man can be depended upon to do only those things which have become fixed habits, and further, that under these same trying conditions, a man who has acquired by practice a habit of doing something a certain way cannot do that thing differently. Action contrary to habit requires thought, and mental activity is difficult if not impossible under the circumstances. Acting according to habit is merely following the line of least resistance.

It is difficult to conceive of greater stress of danger and excitement than exists in a modern battle. Certainly there is no other case in which the knowledge of this psychological truth can be used to greater advantage than in training for battle.

Fixed habits in battle

As far as possible, then, all those things which the men must do under fire should be practiced until they become fixed habits. It has been said that if in the heat of battle a man even raises his rifle to his shoulder, before firing, it shows fair discipline. Not only must bringing the rifle to the shoulder be made

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Habits of correct aiming and firing

a habit, but correct aiming and trigger pull whenever the rifle is brought to the shoulder must be made a habit, and one so strongly developed that these acts will always be done mechanically and without mental effort.

This desired result cannot be accomplished by two or three weeks a year of target practice. The training must be continuous for an extended period. To accomplish it altogether with ball cartridges would be too costly and often impracticable. The desired results can be obtained by pointing and aiming drills and gallery practice, if these are so conducted that the men never pull the trigger without properly bringing the rifle to the shoulder and looking through the sights at some target.

A week of continuous work every six months will not accomplish the results; frequent short drill periods are necessary. A man who starts in by smoking three strong cigars every Christmas and Fourth of July but not touching tobacco between times will not be so likely to acquire the smoking habit as one who starts very moderately and repeats the act daily. Overdoing any kind of training at one time, with long intervals between has a tendency to produce dislike rather than

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a habit. A few minutes of honest work at least twice every week, in pointing and aiming drill and gallery practice, will accomplish the result desired and my experience convinces me that it also produces much better results on the target range than crowding even more of this practice into the last month before going on the range. Certainly it is worth more than the other as a habit-former.

Estimating the range

The better a man can shoot when the range is known to him the more important it is that his sight elevation be correct. A poor shot will scatter his bullets and may hit something even with a wrong elevation but the accurate shot will not hit anything; yet the correct range is valuable even to the poor shot.

On the battlefield we can count only on our estimate of the range; seldom will it be practicable to determine it otherwise. Thus estimating distances has to be made a habit for two reasons: since habits alone count in battle, only by making it a habit can we depend on its being done; and second, it requires constant practice to enable men to estimate distances with fair accuracy.

Devoting two or three consecutive days

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Estimating the range

annually to estimating distances is almost a waste of time; practice should be had every week. I have seen both methods used and I am certain as to their relative values. How this instruction should be given will be mentioned later.

The deployments, advancing the attack, working by signals, taking advantage of cover, and in fact everything pertaining to combat from the opening of fire until the end of the battle must be practiced until it becomes a fixed habit on the part of the men.

The officer as instructor

If we are to have good infantry the officers as instructors must be competent, have an appreciation of relative values, be able to distinguish between what is essential and what is merely desirable and make sure of essentials before spending time on the latter. Each officer must realize fully what has only to be known and what must be made fixed habit and govern his work accordingly.

Hints as to instruction work

Now a few hints as to the instruction work. Never do this work in a perfunctory manner. Always have in mind what you want to teach and how you are going to do it. Put your heart in your work.

I have seen a well drilled company go to pieces under an officer who gave his com-

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mands in an indifferent manner and who gave too much "place rest." The spirit of indifference is contagious as well as the spirit of enthusiasm. If you have no keen interest simulate it and you will find it grow into the real thing. Remember that you are paid for good work and if you do not give this kind of service you are obtaining money fraudulently.

Hints as to instruction work

But not only have you yourself to keep interested; if the best results are to be obtained you must keep up the interest of your men. Nothing kills interest like monotony. There are so many things to be taught and there is so great an opportunity for variety that there is no excuse for not keeping the men interestedly busy for four hours a day.

Make clear to the men in the instruction work, particularly in the field training, not only the object sought but the why and wherefore. In maneuvers always explain the problem to them so far as is necessary to make them understand what the command is trying to do, where the enemy is supposed to be, and the rest. They will respond not only by taking more interest but by doing their part much better.

I have seen a flank patrol out at a maneuver the leader of which knew nothing of

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the supposed situation and had been given no instructions, except to act as left flank patrol. What interest could he be expected to take in the maneuver? How could he be counted on properly to perform his duty?

Callisthenic drill

I believe in carrying out this principle even in the callisthenic drill. Explain to the men the object of each movement, what muscle is to be developed by it and its advantage. Doing this makes this work much more profitable to the men as well as more interesting. It will also prevent our seeing these movements so executed as to deprive them of all their intended value.

Appeal to the intelligence of the men

In other words, treat the men being instructed as the intelligent men they are. They will both learn faster and do better work when they fully understand what is to be done and the reason why. A horse must be simply made to do certain things in a given way; it is a tedious process and a horse never does know much. Men trained as soldiers on the same plan as the horse give results out of all proportion to the time and effort spent. Why not, therefore, make use of the man's intelligence and simply help him train himself?

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II

GENERAL DISTRIBUTION OF TIME

IN this country we cannot follow literally any of the systems of training adopted by the great military powers: our whole military system is too different. We can, however, profit by their experience and, if we translate, not the literal text of their regulations but the spirit, gain much. It is essential that any scheme of instruction adopted should be suited to our organization, method of recruitment and the various conditions surrounding our service.

Requisites of a system of training

The work must be so planned as to utilize all the available time of the year and in that time to cover all the absolute essentials of instruction. In this utilization of the time schools for non-commissioned officers and officers must be included. There is much ground to be covered during the year and unless the time be wisely apportioned it cannot be done.

There is much of the work that can be done indoors; other work can only be done

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outside. Our troops are so widely scattered and under such varying climatic conditions that the distribution of time cannot profitably be the same for all.

Winter and summer work

Each post should make its own schedule. The work in each post must, however, be uniform. For example, in the northern part of the United States the year's training should begin November 1st and end October 31st. All the instruction that can be given during the winter months, should be given, leaving the rest for the open season. The schools for both officers and non-commissioned officers are held during the indoor season; the work done in them should dovetail in with the general scheme of instruction. Particular care should be exercised with respect to the non-commissioned officers' schools; in them the non-commissioned officers should be taught thoroughly how to play their part in the varied work in the field and be given the reasons for things.

Schools

Simply repeating the words of a book should be avoided; teach them to do things. The company commander who is capable and in earnest can do much in winter toward training his company even in garrisons where weather conditions are the worst.

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Most of the captains of one regiment known to me have been doing good work during the past two years in teaching the principles of the conduct of patrols and covering detachments. Some of them made use of the Stacey Relief Map; others simply built a sand table about ten feet by five. On this the sand was moulded to form hills and valleys. Blue strings were laid down for streams, yellow ones for roads. Minature bridges were constructed and placed where desired. Small twigs were used to make forests.

Methods of winter instruction

By means of practical examples worked out on these made or improvised maps the principles were thoroughly taught and more easily than is possible out of doors; when spring came, only a few exercises on the ground were necessary to make these companies proficient.

Another use made of the sand table was in the teaching of entrenching. Bull Durham tobacco sacks were converted into sand bags and the men taught their use in revetting, loop-holing, etc. Similarly on a minature scale were taught the preparation of headlogs, the making of gabions, facines and hurdle revetment. Brush work thus taught

Entrenching

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indoors needs only be followed by one outdoor exercise, in which work is done on the scale actually used in the field, in order to render the company proficient.

Gymnasium

Where the post is so fortunate as to be provided with a gymnasium full advantage should be taken during the winter season of the opportunities for physical training which it affords. The physical development of the men is most important. Where no gymnasium is available a well-planned course in callisthenics is the best substitute and should be used. Callisthenics to music or for pure show should be prohibited.

First aid Signalling

The indoor season must be fully utilized to save the full time of the outdoor season for that training which can only be given then. Instruction in such subjects as first aid and signalling naturally is given at this time. A place for gallery practice can always be rigged up.

Estimating distances

The foundation for estimating distances must be laid, and there should be practice in it every week, during the closed season. In this work the whole company should be employed together only for the first one or two exercises when the principles are being explained; after that a platoon or less at a

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time. Near each barracks there should be two stakes one hundred yards apart and so placed that the men see them every time the company forms. This is their unit of measure and cannot become too familiar to them.

Estimating distances

The captain or someone designated by him selects a couple of distances to be estimated. Each subdivision of the company then goes out in turn and upon completing the exercise returns and another goes out.

The men must be taught to estimate distances both from themselves to a given point and between two points, both at some distance from them. The latter is necessary in their patrol work in estimating lengths of column and frontages occupied. If the estimating be conducted in this way the weather will make little difference; the men dress suitably for it and are out only a short time. The work to be of value must be done under varying conditions of light.

There should be no week in the year in which this exercise is not conducted. In summer it should be done on the days when the company is away from the garrison on the weekly practice march; there is ample time for it during the long halt.

This work can be conducted so as only to

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Estimating distances

take about fifteen minutes of each man's time per week. It is well worth it. I have seen the above plan carried out intelligently in two or three companies and the results were remarkably good; the ability of the men to estimate distance was better than that given for musketry school graduates in foreign services. On the other hand I have seen it indifferently carried out and, like most indifferent work, it was a waste of time.

Position and aiming drills, gallery practice

Position and aiming drills and gallery practice must be a weekly occurrence and holding them twice a week will be better. If the detachments are made small enough gallery practice requires but little time for each man. It is important in conducting this practice to see that no man ever fires a score in a careless or indifferent manner; if this is permitted the result obtained will be the opposite of that desired. I found one very effective means of preventing such careless work: a man found guilty of careless firing was required to repeat his score—but not at that time when it would delay the regular course. He had to remain near the gallery until I, or someone designated by me, came around to supervise his firing and it was usually some little time before I got around.

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Throughout the year careful attention should be given to bayonet fencing. I do not believe that there is much probability of a bayonet contest in war but, for psychological reasons, this training is necessary. Positions are carried by the bayonet, but past experience shows that in such charges the bayonets seldom crossed and when they did it was a "rough and tumble." Our men may go in with the best intentions in the world to use the bayonet according to rule, yet the chances are that, in the excitement of the mélee, habit will assert itself and the gun become a bat.

Bayonet fencing

Nevertheless, troops are very seldom "shot out of a position"; the imminent threat of the bayonet is necessary; but, as the opposing bayonets get close, one side or the other weakens.

It would be folly to expect men without bayonets to charge an enemy with long and sharp ones, or to expect them without bayonets to stand a charge by an enemy armed with such weapons, even though, if they had bayonets, they would be likely to club their rifles. The moral effect of a line of bayonets is great.

Kind of bayonet required

Infantry should be armed with the best of bayonets, long and, in war time, razor sharp. The men must have confidence in

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their ability to use them with skill and effect; otherwise they will neither charge nor stand the enemy's charge. At that stage of the fight success largely depends on the confidence of the individual man in his power to win.

Amount of bayonet practice

Bayonet fencing should be continuous throughout the year. At least one-half-hour weekly should be devoted to it and during the indoor season extended and careful instruction should be given to groups not larger than a squad. During the outdoor season this instruction should be so arranged as not to interfere with the regular drills.

Division into sections for instruction

The company should be divided into sections that can be handled conveniently for the instruction work. The success of the indoor work largely depends on keeping the sections small enough.

This is especially necessary in first aid and sandtable work. If the sections are too large at estimating distance and gallery practice it results in too much idle standing around.

Changing sections

The sections must be changed from one class of work to another before the work drags or the men become tired of it. Give them variety.

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Selecting instructors

The captain must exercise care in selecting the instructors for the various subjects. The man who will do it the best should be the instructor in each. Perfunctory or indifferent work should never be allowed on the part of an instructor or by the man being instructed.

The captain

The capable, intelligent and honest captain will utilize the indoor season to the great benefit of his company and of his government. He will discover the best ways and means of instructing his own particular men. The incompetent captain, lacking average intelligence, will accomplish nothing under any circumstances.

Initiative in the instruction work

As much latitude as practicable should be given to subordinate commanders in carrying out any system of instruction and they should be held strictly responsible for results. A scheme in which there is laid down just how each thing is to be taught, and how much time and what time is to be devoted to it, is radically wrong. We need to develop our officers as well as our men. The conditions are different at different posts. The needs of different companies at the same posts are varied. Each captain should know just how much time he has and what is absolutely

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required of him in that time. He should then be allowed to work out his own solution of the problem.

Initiative in the instruction work

When every detail is prescribed the officer has no initiative, his interest is diminished, he thinks less, exercises less responsibility, and his work is not so good. If that policy be kept up long enough the subordinate officer will never do anything without positive instructions. An officer who exercises no judgment is of no value in war.

The regiment a team

But absolute liberty for the subordinate to do as he pleases is impracticable. The regiment is a team of which his unit is only one member. There must be team play and every member must know and be able to do his part. The company must be taught certain things or it will not fit into the battalion team; the battalion must be fitted for the regimental team. Each larger unit must have time for training and has a right to demand that each lower unit which forms a part of it shall have accomplished its own special work on time and be ready to play its part in the work of the larger unit.

The colonel

The colonel is responsible for the training of his regiment. He should allot the time, supervise the work and see that every

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member of the team is ready. He is the best judge of the requirements of his regiment. But the colonel should do this so as to leave all the liberty practicable to subordinate commanders.

Orders and restrictions

If all our captains were competent and reliable this work of the colonel would be very simple. But there are a few captains, unfortunately, who are far from the best, whose long suit at drill is "place rest" and having a sergeant drill the company in Butts' Manual. While more restrictions are necessary for such captains these restrictions do not hamper the others; they merely prohibit things the right kind of captain would never think of doing or require what he would never think of omitting.

Time to organizations

Of course most of the instruction time belongs to the companies; it is in them that most of the work must be done. Four well trained companies under a competent major can be made into a well trained battalion in a very few days, and the time required for each higher unit is less than that for the one next below.

To the company belongs all the indoor season. In dividing the rest of the year for the northern part of the U. S. I believe that

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the available time from April 1st to October 1st should be allotted in the proportion of 4 days to the company for each 2 to the battalion and 1 to the regiment. The month of October should be devoted to maneuvers and to work in higher units. The time spent on the target range is excluded in computing the available time but no company should be allowed to devote more than two weeks to target practice exclusive of field firing; of the latter we can hardly get too much. It is appreciated that conditions at various posts make different schedules necessary.

Time to target practice

In the past we have seen the training done in a back-handed way: work in the higher units first, finally down to the company and soldier. This is so unlikely to occur in future that its evil results are not worth mentioning.

Too much time should not be devoted to close order drill, especially during the outdoor season. An hour a day for the first five or six drills and thereafter fifteen minutes a day is ample. There should always be, however, at least ten minutes a day of snappy, precise close order work; this together with the ceremonies will keep the companies up to the standard. Too much close order drill becomes monotonous; when that happens the

Time to close order drill

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command fails to improve even if it does not deteriorate.

The drills during the indoor season should be two hours long; for the rest of the year not less than three and generally from four to six hours daily. **Length of drills**

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I

FIRE SUPERIORITY

WE are told that in battle we must have fire superiority to win; and fire control and direction are held as important. I doubt if these terms are fully understood by all. A hope to aid some of our younger officers to a better understanding of these terms, and of the vital importance of fire distribution, is the excuse for this chapter.

Fire effectiveness in battle

A line of men firing with the rifle, if not disturbed or endangered by the fire of an enemy, can do approximately target practice work. Now let a heavy fire be opened on them, one that is fairly accurate and well placed, and their work falls off very greatly; the heavier the fire they are subjected to the less effective becomes their own fire.

Careful study and research by competent men of foreign armies leads to the conclusion that if this line, when not under fire, could make 280 hits in a given time, subjected to a heavy, well placed fire its effectiveness would fall to 1 ⁄ 40 or 1 ⁄ 70; that is, from 280 hits to 7 or 4.

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This looks extreme at first thought; but what captain with a good company but would know that he could deploy his company at from 800 to 1000 yards from a line of lying down figures and get a hit for at least every 10 shots. Yet history tells us that it takes from 1200 to 2000 shots in battle to put a man out of action. In the light of these facts our first figures look very moderate.

Fire effectiveness in battle

With our present infantry arm an advance against a hostile line doing 280 work is impossible. Bring the enemy's effectiveness down to the four and keep it there and you can advance and win.

Fire superiority does not mean that you are firing more shots than the enemy, it does not mean he is firing less than you; it means that your fire has become so close and effective that he has lost his nerve and is shooting wildly.

To obtain this fire superiority certain things are necessary. We must have proper fire distribution. To explain this let us assume that a hostile line is 200 yards long, that our force is the stronger. We concentrate our fire on the right half of the hostile line, leaving the other half untouched. The effectiveness of the fire of half of this line re-

Fire distribution

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Fire distribution

mains at 280, the other half falls to 2, average 141; our advance is impossible. We now cover the entire target and its fire effectiveness falls to 7; our advance is possible.

Fire superiority is possible, then, only if we have fire distribution. It is not sufficient to fire a certain number of shots at part of the line, the whole hostile line must be subjected to a nerve racking fire to reduce the effectiveness of its fire.

Another thing to be considered is that the enemy will conceal himself as much as possible. On a large part of the hostile line no one will be seen; men will be hidden by tufts of grass, bushes, etc. But while this cover conceals the enemy from our view, he sees our location and his fire is not interrupted. There is a strong tendency to shoot only at the men that can be seen. This must be overcome; much of our firing must be aimed at a locality, although unseen the enemy is nevertheless there and his fire effectiveness must be kept down. Our fire must be distributed to cover every part of the hostile line whether the enemy is seen or not.

To secure this fire distribution we must be able to direct the fire of our men, to place

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it where wanted. But direction necessarily implies control; you can not direct what you cannot control. Thus a fire control system which will work on the battlefield is a primary requisite to success. **Fire control**

Another term used is fire discipline. The word fire adds nothing to its meaning; but discipline is vital to success. No matter what your system of control, if the men do not respond with prompt obedience it is worthless. Disciplined men can be counted on to do what is wanted if they know how, others cannot. There is no fire discipline distinct from other military discipline. **Fire discipline**

To sum up: fire superiority is necessary to success, to attain fire superiority we must properly distribute our fire, to do this we must be able to control and hence direct it, and this can only be done if our men are disciplined. An attack with raw troops is possible only against still poorer ones.

Our fire control and direction needs more explanation. A method must be had which will work on the battlefield. No one who has seen a modern battle will think for a moment that it is practicable to control and direct a firing line by verbal orders. A battalion commander must be far enough to the rear **Method of fire control**

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to observe his entire line. In the noise of a real battle his voice could not be heard ten yards by men on the firing line. The same is equally true of company and platoon commanders. These officers cannot be running up and down the line giving instructions; if they tried it they would not last long.

Use of signals

Our method must therefore be one that can be executed independently of the voice and with as little exposure of the officers as practicable. The method by signals given in our I. D. R. answers the requirements. The text of it can be learned in a few minutes, but to train a battalion so that it will fully respond under danger requires hours of practice: it is one thing that must become a habit.

After the mechanism of the drill is learned officers should conduct their line as in battle by signals only. Do not teach men to expect you to be running up and down the line personally correcting errors and giving directions, leading them to expect this to be done in battle. The effect of a decided change in conduct when danger is present is apt not to be good. Moreover, the command will not respond to signals alone on the battlefield if, in instruction work, they have never been

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taught to depend on them exclusively. We should do everything at battle exercises just as nearly as possible as it will be done in battle.

Use of signals

I have seen at battle exercises men stand up in the open and wave their flags to give the signals. This is absurd. In battle it would be needlessly dangerous, would give the enemy too much information, and it is unnecessary. The necessary signals in the battalion can be given by a man lying on the ground with a handkerchief, or flag without the staff, and be seen for the short distances separating the major from his captains or the captain from his platoon commanders. Practice alone is required to enable this to be done efficiently. It must be so done in battle and must therefore be drilled that way.

It should be remembered that the new semaphore code recently adopted does not apply to these signals. The new code requires men to stand; the old must be used for these battle signals.

Additional signals to those given in the I. D. R. may be taught and used in companies. It is doubtful if they are necessary and if not necessary they are wrong. The more signals you have, the more chance of mistakes.

Additional signals

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Additional signals

Signals for forming squad or platoon columns are unnecessary. These movements are not executed close to the enemy nor when your line is firing, hence verbal commands are practicable and when practicable are desirable, are surer and easier.

Signals are necessary when your line has commenced the fire fight but from there on few commands are necessary; there are so few things that can be ordered, the time for maneuver and instruction is past. One or two of those given might be dispensed with and one for fixing bayonets should be added; possibly there are one or two others that should be added.

Observing fire effectiveness

We have discussed how to obtain fire superiority; how may we know when we have it, if the volume of the enemy's fire remains practically the same? Company and platoon commanders must watch for the effect of the enemy's fire, where his bullets are striking. If the hostile bullets are going wild, some striking far short, others way high, and very few are effective, you have fire superiority; that is the time to gain distance to the front. On the other hand, although you may be suffering no loss, you see that the enemy's bullets, well massed,

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are striking, say 50 yards in your front; you have no fire superiority; the enemy has simply underestimated the range and your advance will bring you into the center of his beaten zone. But this is your opportunity to gain fire superiority. Your men are suffering little or no loss, should be less affected and should do better work. If this opportunity is well utilized you will gain fire superiority.

Observing fire effectiveness

When you have fire superiority you must push the advance, take full advantage of your opportunity; if you temporarily lose it, suspend the advance until you regain the necessary superiority.

Fire properly distributed is one essential to gaining fire superiority. Proper distribution means it is placed *on* the target and on all of the target, not just one part. Placing our fire on the target requires that our men be at least fair shots, have their nerve and know the range. To cover all the target rather than concentrate on a part is not easy and to attain practical efficiency in this requires skill and practice.

Distribution of fire

In the deployment for battle the division is generally given a specific mission, the division commander assigns to each brigade its part of the task, and so on down to the

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battalion, company, platoon and even squad.

Distribution of fire

There is little involved in the larger units except the tactical skill to know how to use the larger units to gain the required end; dividing the terrain is easy. It is difficult with the commanders of the smaller units; the division of the target generally becomes harder the smaller the subdivision. The major must divide his target, say between two companies, and do it so that there can be no mistake on the part of the captains as to just what part each is to cover. The company commander must then divide his section among his platoons and the latter often among the squads.

The captain's problems

The battalion commander has only one difficulty—to find a way to make each captain clearly understand where is the division of target and where its extreme limit. The company commander has a shorter line to divide and has to divide it into more parts. Landmarks are not so common as he will then desire.

The captain has another problem in this connection: shall he divide his target into four parts and assign each platoon a separate part, or into two parts and give two platoons the same target, i. e., 1st and 3d the right

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half, 2d and 4th the left half? The captain has not only the problem of finding proper dividing points in the target, but he must divide and allot the target so as to get the best fire effect. It might happen, as I once saw in a field firing problem, that the right platoon could not see the corresponding part of the target, hence was given the other extreme flank and the rest of the target divided accordingly. It is not the division alone, but what is the best division and allotment, that must be considered.

The captain's problems

This will all be more clearly understood if you will go in the country and assume a regiment is ordered to attack a certain line under certain conditions, and then give the colonel's attack order, from that take each major's target and divided it between the companies and then divide each company target. This should, of course, always be done at the same distance from the target that you would have to make the distribution if a real enemy were there. You should have two or three men with you to act as the subordinates in each case and to determine whether the division is fully and perfectly understood. It is easy on a map, but often very difficult on the ground; distinctive marks are sometimes very scarce.

Practice in distributing the target

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Practice in distributing the target

Each commander should practice this, devising a method for himself that will work. Officers alone or together in small groups should practice it as a sort of tactical walk. But primarily it should be done in each unit: the colonel should take the majors on such a tactical walk; the majors their captains; the captains their platoon commanders. Estimating distance should be worked in the same exercise.

For the companies this is good work for the indoor season. There are days when work can be planned for the company that does not require the presence of the captain or of most of his officers and non-commissioned officers; these can then utilize the drill period as above described. It may be made a real tactical walk with special stress laid on the division and allotment of the target.

Assistance of artillery

It must be borne in mind that in most cases the artillery will play a large part in the gaining and maintaining of fire superiority. But this fact does not alter the work of the infantry; we must still do most of the killing and unnerving of the enemy and this is true whether the enemy consists of infantry alone or of infantry in conjunction with artillery.

In this chapter the first part is much like

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"right line strategy" mathematics applied to a battlefield where little is subject to such treatment. But that seemed the easiest and simplest way to make clear to beginners terms that must be fully understood. It is hoped that that part of the chapter will be understood as meant, as offering merely a means of illustration and not as implying that a battle can be worked out with mathematical precision.

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IV

COMBAT

WAR, according to Clausewitz, is the continuation of diplomacy. Diplomacy is not always able to settle international disputes, then the army must do what the diplomats have failed to accomplish. In our own history it has been the mass of the people who have forced our wars, and who, in the case of a strong public sentiment arising, will involve us again. On account of the state of preparedness of most great nations and because of the enormous cost of modern war, wars are shorter than formerly.

Object of an army

If this country becomes involved in a war with a military power it will be impracticable to learn the art of war and train an army after the outbreak; the war will not last long enough. The object of having an army is for war not for peace, and the battles alone really decide the issue; the battles are not numerous but each tends one way or the other to end the struggle. Great armies exist for many years between wars and are then trained for these few days of

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battles which determine the fate of the nation. The whole aim of an army should be to be ready for war and the success or failure in war is determined by a few days of battle. Untrained troops are of no value on the modern battlefield.

Part of our close order drill, the ceremonies and some other things we teach, are accessories and, if given their proper place, are of value, but the battlefield is the crucial test; by our fitness for that must our training be judged. The work of generals and the general staff is vitally important but the best plan will accomplish nothing if there are no trained companies to carry out their part.

Training for battle

In this chapter is considered the training necessary for combat. This is the work executed under the severest strain and under the greatest difficulties of leadership and control. This training must be thorough and the things in combat which have to be done must become a habit.

THE COMPANY

The first essential is that the men must know the mechanism of the extended order drill, including all signals used. To keep control of the skirmish line in battle, that is to

Extended order practice

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Extended order practice

maintain such order therein that it can be directed and used as desired, is far from easy. Excitement and confusion, especially in the last stages of the combat, are apt to occur. Everything possible must be done to preserve organization and control.

Much depends upon the start; if there is confusion at the start and the squads get mixed, success is more than doubtful. In the majority of cases the deployment will be made quietly at long range, but not in all. The company must be drilled until able to deploy from all formations, facing in any direction, in the least time practicable, and without any confusion or mix-up.

Calmness in giving orders

The captain who can give all his orders and commands at the start of a fight in a calm, unexcited manner has a great advantage over the one whose voice or manner indicates excitement. This calm manner should be cultivated during training. As good a way as I know for such training is to have a few men to represent hostile forces conceal themselves at various points in a moderately close country; march the company through this terrain and, as the represented enemy appears, form skirmish line facing the supposed enemy, give the range

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and the commands for opening fire in the least possible time. The captain himself should not know where the represented enemy will appear. This is training for the captain and also excellent practice for the company.

Occasionally during an advance points are reached where a company is sheltered from fire. Advantage should always be taken of such opportunities to reëstablish perfect order, replace fallen leaders and thus get a new start. Such an opportunity decidedly increases your chance of success in battle; real control is reëstablished. Practice this in your battle training when the opportunity offers, but never do it when, in a real combat, it would be impracticable.

Restoring order

After the mechanism of the extended order drill is understood all combat exercises should have a problem or situation. These should always be simple; elaborate tactical problems for this instruction work are unnecessary. For a simulated attack as part of a line, all that is necessary is a statement that the enemy, a regiment of infantry, is holding the line from ——— to ———, our regiment is to attack it at once, our battalion on the right, we are the right company, our target or objective the part of the line from ——— to

Combat exercises

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———. This of course should be varied but need be no more complicated. The captain should give this to his whole company, let all the men know what they are supposed to be doing.

Situation and orders

The captain should then give his attack order, always carefully distributing the target. For a company operating alone the following form will answer every purpose: This company belongs to a division engaged with a hostile division five miles north of here. This company was detached to capture that building (pointing) which is assumed to be important. The defending force occupies the line ———. The order for the attack then follows. Usually in such a case, a small support would be held out. Of course the problems will vary according to what it is desired to teach. Always distribute the target and let the men understand what you are trying to do. All combat exercises should be conducted as nearly as possible as though the enemy were real. Allow nothing to be done that would not be attempted were it real war, otherwise you do not give instruction but misinformation. After the mechanism is taught, the captain and platoon commanders must conduct themselves in combat exercises

Method of conducting exercises

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as they would under hostile fire, keep close to the ground, use signals only. After the exercise is over have a critique, point out the errors made and tell the command how they should be corrected.

Method of conducting exercises

You must expect that if mistakes are made at the drill they will be made in battle; to correct these mistakes you should use only those means at drill that will be practicable in battle. The captain needs much practice in thus handling a skirmish line and those under him need more practice before the company can be well handled in this manner.

Means of representing enemy's fire

The effectiveness of the enemy's fire should be indicated that platoon commanders can practice the control of rushes. The simplest way to do this that I have found is to have a man at the hostile position with two little flags. Holding both of these vertically over his head means the enemy's fire is wild and nearly harmless. One flag vertical the other horizontal indicates a moderately effective fire. Both flags horizontal indicates the maximum effectiveness—that the enemy has a decided fire superiority. When both flags touch the ground it indicates no fire.

The advance of the attacking force is only practicable by taking advantage of the times

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Means of representing enemy's fire

when the fire is ineffective or weak to push forward, and, when the hostile fire is too strong, shooting to gain fire superiority. Platoon commanders and men must become accustomed to seizing these opportunities to advance and suddenly getting down when there is a burst of effective fire. The flags on the hostile position may be controlled by an instructor, stationed behind the company officers, indicating how the flags are to be held.

Remember that the hostile fire becomes more effective in proportion as ours is less effective. If we have the most men we should gain fire superiority if our shots are well placed. If the firing line has not distributed its fire properly the instructor causes both flags to be held horizontally; no advance is then possible until the company officers find out the cause of the trouble and correct it. The same is done whenever a serious error in sight elevation is made. Majors should frequently conduct such exercises with their companies. The company officers must become quick in determining why the hostile fire is more effective than suits existing conditions and learn to correct the error.

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Judging defects in firing

You may not be able to reduce the effectiveness of the hostile fire so that an advance under it is practicable and, in some cases, it may not be your mission to do so; but in every case where the hostile fire passes a certain point of effectiveness, depending on relative numbers, your range, distribution or something is wrong, or else your men have lost their nerve. Judging the effect of the hostile fire is something in which company and platoon commanders must be proficient, but off the battlefield this can only be taught in theory.

Advance by rushes.

In advancing the attack by rushes the size of the fraction rushing will be dependent upon the relative proportion of rifles necessary to hold your fire superiority. If rushes are practicable at all it will seldom be necessary to rush by smaller units than the platoon. But an advance will sometimes have to be made by fractions of only a man or two and sometimes by crawling. All these should be taught.

When the enemy is active the rushes should not be long, if of only 25 or 30 yards the time the men are actually running will be very short, too short for the average man to pick up the target, raise the rifle to his

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shoulder and fire with careful aim. Too much time is taken by the average man in getting up and down. The men must be practiced in springing to their feet and getting down again in the shortest time possible. There is a knack in this not difficult to acquire.

Reinforcements

Reinforcing a firing line will generally bring about intermingling of squads and platoons. To avoid this by closing in on the center by companies, thus creating gaps for reinforcements, is impracticable on a battlefield when reinforcing is necessary. In battle in the great majority of cases reinforcements will go in as they can and fall into the existing gaps where found. As this will be the rule in battle we should so drill it.

When the next rush is made, say by squads, where do these reinforcements go? In one regiment at least, they solved it satisfactorily. The points of division along the firing line remain where they were; the new man who joins the firing line always goes with the man on his right, he belongs to the squad and to the platoon of the man on his right. This provision should be added in the I. D. R.

In teaching the mechanism of the extended order, practice should be had in this

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by dividing the company into firing line and support and then feeding in the support and continuing the advance by rushes. If you expect this to be done in battle it must become a habit. To get the best practice in this mixing, as well as to train officers and sergeants to think quickly and to act properly, there should be many rencontre engagements so planned as to bring about a mixing of units on the firing line.

Mixing on the firing line

Some practice should be afforded with companies at war strength. This can be had by combining two or more companies. By this means it is sought to accustom officers to the fronts and depths of such a company and also to the greater length of time required to change formation.

Practice at war strength

In combat exercises of the company alone practice must be had in shifting part of the fire to new targets and redistributing the old. In large battles this will seldom if ever be required by men in the firing line, but it will occur in detachment work. The companies should get practice in this and it can be well coupled with the instruction in hasty deployments suggested on page 46.

Redistributing the target

Some work should be done on the defensive. A few men should be detailed to

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represent the enemy; if the man carries one little flag he represents a squad, if two flags a platoon. These men should be in charge of a competent man who as nearly as is practicable directs their advance as such units would really advance under the assumed conditions. Enveloping movements and surprise attacks can thus be well simulated, giving the company the opportunity to practice meeting such movements by the use of the support, redistribution of targets, etc.

Work on the defensive

The instruction against an outlined enemy having been practiced until the companies are well instructed, the enemy should be represented, one company should work against another. This gives an opportunity for reconnaissance work before and during the attack and introduces the elements of uncertainty as to what the enemy will do.

Company against company

In war, night operations are inevitable and we must recognize this fact and prepare for them. Night marches by large commands, patrolling by both large and small groups, and outpost work, including the establishing of the outpost in the dark, will all occur as well as an occasional night battle. In all this work the principal difficulty seems to be to avoid confusion and mistakes.

Night operations

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Orientation

The men, especially those who are city bred, are unable to orient themselves in the dark. The darkness when coupled with possible unseen foes has a demoralizing effect and this effect will be the greater the more helpless the man feels himself to be in the dark and the less confidence he has in the ability of the company to act as a company. Much of this difficulty can be overcome by a little careful training.

The men should be taken out and taught to orient themselves by the stars and prominent features that can be distinguished at night. The effects of different backgrounds on the visibility of objects should be demonstrated, and especially the prominence of objects on a skyline. Estimating distance by sound should be practiced. The men grouped into small patrols should be made to find their way from place to place and then to operate against other patrols.

Night drill

The company should be drilled at night. Forming line from column, front into line, on right or left into line, and even forming line of skirmishers, should be practiced and an occasional night march made. A very few drills each season, held at night instead of in daylight, will do much toward giving the men

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that necessary confidence in the ability of the company to work together in the dark.

Night drill

It will sometimes happen that a command will have to go into camp after dark and establish an outpost. This should be practiced at least once each season after the company has been well instructed in the work by daylight.

Night attacks

Satisfactory training for night attacks is difficult. The first principle governing night attacks is not to shoot but to get in as close as possible undiscovered and then rush with the bayonet. It is impracticable to practice this with a represented enemy; it is too dangerous. To practice it by allowing the opposing sides to fire blanks at each other is all wrong because it is teaching the men to do what they should not do in war.

One method is to place men to represent the enemy behind a suitable fence, then to make the advance and attack, causing the represented enemy to open fire as soon as the attack is discovered. An open wire fence will not prevent the discovery of the attack but will stop the bayonet rush before anyone is hurt. This is not very satisfactory work for the company but is more appropriate for the battalion and regiment. In these latter

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it is desirable to practice the necessary formations for such attacks and to give the officers experience in such troop leading. For this work to be of benefit the officers must know their night tactics, the proper formations to take and the best methods of troop leading; this knowledge should first be acquired by study and then put to the test at night. It is not well to devote too much time to such work.

Night attacks

In many posts practice can be had in tactical work in the woods. This opportunity should not be neglected. A good tactician will try to avoid a thick forest as a battlefield but with long lines of battle parts of the line will inevitably extend through forests. Hence the officers must study the principles governing woods fighting and seek to train the men so that they can play their part. Woods combat has many of the difficulties of night work.

Woods fighting

There should be considerable work on fire problems; it is excellent practice, especially for the officers and non-commissioned officers. Field firing is not here meant but simulated firing. A simple problem is given and the officer or sergeant with a platoon or company solves it practically. By using a

Fire problems

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Fire problems

few men with flags to represent the enemy and with a proper critique afterwards for all the company, great benefit should be derived.

As an example of such a problem: dispose one platoon of the company under cover near a ridge with a concealed man watching to the front and stationed about 25 yards from the platoon, the remainder of the company 400 yards in rear but in sight of the platoon. The following situation is then given out:

Fire problem against cavalry

"This company has been detached from a larger force back at X. Hostile cavalry is in this neighborhood and is doing much damage. The orders received when this company was detached stated that other companies were to go out on other roads and this company on this one to inflict as much punishment as practicable on this cavalry if encountered. We have reached this point and just halted for a ten minutes rest."

As soon as the situation is fully understood and the men are in their respective positions, a troop of cavalry, represented by a few men with yellow flags, comes in view of the sentinel and halts. Either verbally, or by a signal agreed upon, the captain explains that they have dismounted for rest. The sentinel and platoon commander now have their problem.

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As another example take the same general situation in such terrain that a glimpse is caught of the troop moving along a road but immediately it passes behind cover; several hundred yards beyond, if it continues on the road, the troop will again come into view and be exposed for a considerable stretch of road and within rifle range. What is done now?

Fire problem against cavalry

After the exercise the captain assembles the company and criticises the errors made and points out what should have been done. In the first situation opening fire by a few men would result in the hostile troop's mounting and getting away with little damage or else in their getting their horses back under cover and being prepared to fight on foot. After the company once opens fire it will have a target but for a very short time; hence great care must be exercised in estimating the distance, dividing the target and giving the other necessary orders so as to produce the greatest effect in the least time. The captain should carefully study his problem and be prepared to give an instructive critique.

A little book called "Fire Problems" by T. D. Pilcher of the British Army is recommended to our officers; it treats this subject more fully, gives several problems and shows how the solutions should be criticized.

Suggestions for fire problems

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Suggestions for fire problems

The problems must be gotten up, as a matter of course, to fit the ground you have. A great variety of fire problems is afforded by any terrain. There should be some problems in which more than one target is offered. In getting up problems do not let yourself be hampered by the critics who will tell you that a troop of cavalry would not have crossed your front without having discovered you or without having been warned by its patrols: you are teaching fire tactics, not cavalry tactics, and besides, even cavalry has been known to do foolish and careless things. Try to make the problem reasonable and one which might occur in war but do not discard a good fire problem which teaches a valuable lesson because the situation is one which ought never to arise in battle. Few problems that are tried out in maneuvers will ever be duplicated in that exact form in war but the tactical principles involved will recur often.

Distribution of fire problem

There is one field firing problem which, if practiced once each year, would do a world of good in securing fire distribution. A line of prone figures is placed to represent the enemy on ground so selected that, while the figures cannot all be seen by the attackers, yet a man in the place of each figure could

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see the ground over which the advance is made. The defensive line should not be straight; it would seldom be so in war, it must conform to the ground. There should be stretches of thirty or forty figures that are concealed, then groups in plain view; brush, clumps of heavy grass afford the kind of cover desired. Have the battalion go through the form of attacking this line, using ball cartridges. Then have the men inspect the targets, see how plainly they could have been seen by the enemy while the latter was out of sight and see the effect of cover on the fire drawn and the faults in distribution. After this carefully explain the results of a lack of distribution; point out that the long stretches of the hostile line not under fire would have been doing target practice work on your advancing line and what the resulting losses would have been.

Distribution of fire problem

It is an effective way of impressing on men's minds the necessity of proper distribution and of firing where directed whether they see anything or not. It also shows the advantage of cover, if only from view. The men must be taught to take advantage of cover, if only from view, whenever offered, if it can be done without interfering with their doing their work.

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Combat against cavalry

For combat against cavalry the men must be taught in their bayonet work the proper way to oppose a man on horseback. How to meet a charge with fire must be largely theorectical but it should be carefully explained and, if a few mounted men are available to outline a charging force, some practical work can be had; it is a fire problem.

Special company problems

There are many problems in minor tactics that should form part of every company's training, such as forcing a defile or a bridge, passing through a village as a patrol or as advance party of an advance guard, passing a woods under the same conditions and, on the side of the defense, preventing a hostile force from doing these things. There may be no gorge or pass through hills in your immediate vicinity but the practice can still be had: two large buildings near together will answer for a defile; the garrison is a village. If there be no bridge, with a little imagination you can improvise something to answer. In this class of problems the captain must know the tactics of his problem and be able to explain it thoroughly. Generally in these problems detachments having important missions have to be made; give their commanders muc latitude in carrying them out and in your

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critique point out the errors and how the work should have been done. It is well in all such problems to precede them by a simple talk to the whole company explaining the tactical principles governing the work. These problems can be made the most interesting part of the company's training.

Special company problems

Instruction must be given the company in meeting artillery fire and in the work of the various covering detachments but these two subjects, owing to their importance and length, are reserved for consideration in separate chapters.

The company commander must get the full help and support of his platoon and squad leaders, much depends upon them; they are the real leaders of the men; they require much training and practice, especially in leading the rushes and in controlling and directing fire.

Hints for company work

The discipline must be strict in these exercises, the men must never be allowed to slight the work. A certain amount of latitude must be given but prompt obedience to an order must be insisted upon. Without such discipline an attack is hopeless; the drill field is the place to acquire it.

In all this work keep the interest of the men. Occasionally take them to a shady

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Hints for company work

place and instruct them orally, explain the objects sought and the reasons for doing things in anything that is part of their proper training.

Do not keep at one class of work until the men are tired of it; vary the work. You can keep a company interested for four hours a day if you will only vary the instruction and put some soul into it. Give very little place rest; for a rest change the work. Combat exercises must be frequent. They are entitled to a large share of the time; the work of the firing line must be a habit.

THE BATTALION

Hints for battalion training

The period of company training having been completed that of the battalion commences. The same general plan should be followed as in the case of the company. The mechanism of extended order should first be thoroughly learned, then the attack against an outlined enemy, then battalion against battalion. The enlisted men have little new to learn, the work for them is merely practice in what they have learned in the company training. For the captains it is instruction in team work and in tactics.

The battalion is the attack unit and as a

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tactical unit is most important. An infantry attack is largely a combination of battalion attacks. Every exercise should be a problem which teaches some lesson as well as affords practice. The employment of combat patrols of some size can be made a part of the exercise and their proper use and leading taught. The use of the local support, how it is handled and how maneuvered, is a very important part.

Hints for battalion training

In these exercises the major must control his battalion as in battle. The absurdity of his riding around and giving verbal instructions to his firing line must not be permitted. A great part of the value of these combat exercises lies in the practice given in handling a battalion with the limited means of control possible on the field of battle and accustoming company commanders to carrying out their part under the same conditions. Majors thus learn to give their initial orders so as to insure the carrying out of their plan of action.

The battalion being the attack unit, whether alone or as part of a long line, its rushes are independent of those of other battalions although as a whole it keeps the general line. Each company of course must govern its advance by that of the others in

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Hints for battalion training

the same battalion. An advance can only start from one flank or the other of the battalion and then continue successively to completion. Rushes never start from both flanks or the center; the reason for this is obvious.

The little flags mentioned under company training can be used in battalion training to even better advantage. Captains are more on their own responsibility in a battalion than are platoon commanders in a company and must act according to assumed existing conditions. In the battalion the shifting of fire from one target to another is less frequent than in the company. New unexpected targets are cared for, as a rule, by the support.

Battalion commanders have more need of reconnaissance and must get experience in ordering it properly and judging the reports and basing their action thereon.

When a battalion operates against battalion the colonel should prepare the problems and act as umpire. If he does not do this the practice should not be omitted, the majors concerned must get up their own although this is not so satisfactory.

The battalion commander or colonel should give a critique after each exercise, pointing out all errors of tactics and of exe-

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cution. There should be much more of tactical instruction and less of mechanical training in battalion work than in the company.

Hints for battalion training

Majors should not be limited to these drill periods to instruct their officers but be allowed to have tactical walks at other times. A major should have a good knowledge of tactics, be able to give clear and concise orders and enter into the spirit of his work. Four good companies, under a competent major learn with very little practice to work together as a team and become an efficient battalion.

THE REGIMENT

In the period alloted to the regiment the solution of tactical problems and thereby the gaining of experience in team work and imparting tactical instruction to the officers are the ends sought. The same rules as to method of control, giving of orders and critique apply as in the case of the battalion.

Regimental training

The colonel is responsible for the training of his regiment. It is not trained until the three battalions, the band, machine gun platoon and mounted detachment are trained, each in its special work, and then the whole is practiced as a team.

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The training of the twelve companies, as such and as battalions, has been discussed.

Band

The band forms a large part numerically of the sanitary detachment of the regiment in battle. It must be trained and made efficient. This should be done by the officers of the Medical Corps serving with the regiment. There should be no perfunctory performance of this work; the colonel should see that it is thoroughly done.

Machine gun platoon

The officer in command of the machine gun platoon must not only instruct his men in the care and working of the guns, but in the proper care of all his equipment, including the animals. The machine gun is an emergency weapon; the commander of the machine gun company must thoroughly understand the tactical use of this weapon and be able to act as circumstances demand even without instructions.

Mounted detachment

The mounted detachment must be trained as scouts.

Objects sought in regimental training

The principal objects sought in the regimental period are practice and experience by the colonel in handling his regiment as a whole, practice by the regiment in team work, and tactical instruction for all. A practical knowledge of tactics on the part of the colonel is essential if these exercises are to be correctly

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carried out and his critique of value. Overlooking tactical errors in these exercises does much harm, younger officers gain wrong ideas and it is hard to eradicate errors once firmly fixed in the mind.

Objects sought in regimental training

If the different units of the regiment are separately well trained it requires few exercises to make a team of them, good regimental work is largely a question of the tactical skill and ability of the colonel. If he is competent and the units are separately well trained the regiment is trained. Placing these well trained units in the hands of an incompetent regimental commander is but placing a fine and complicated machine in the hands of an unskilled operator; there is a fair chance that he will ruin the machine.

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V

ARTILLERY FIRE

Object of study of artillery

EXCEPT in small engagements in detachment warfare the infantry will have the assistance of friendly artillery and will be opposed not only by infantry but by artillery fire. Some knowledge of artillery, its use, the effects it can produce and how best to utilize the aid afforded by our own and to meet the opposition of the enemy's, is therefore necessary for the infantry officer and also for the men in ranks. While familiarity with the artillery will be far from breeding contempt, it will enable the infantry to escape much unnecessary loss and, by correcting the false conception so many have of its power, it will improve the morale of our men.

This chapter is not intended to teach infantry officers what they should know about artillery and its use. It is offered merely as a suggestion as to what our men should be taught and how to train them to meet certain phases of this fire. The officer should know much more about the subject and must go

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to more extended works by more competent men for the instruction.

Artillery is effective against infantry both physically and morally. The moral effect is the greater, the less instructed and trained is the man. Most untrained men have very exaggerated ideas as to the effectiveness of artillery, they know nothing but guess much. It is the terror of the unknown.

Classes of artillery

There are two general classes of artillery that accompany an army: light and heavy. The light artillery may be rifles or light howitzers; the first have a flat trajectory, the others, of greater caliber, have the advantage of being able to use high angle fire. Mountain and horse artillery are merely subdivisions of the light artillery and, except that the mountain artillery is less effective at long ranges than the others, "all look alike" to the infantry advancing under their fire.

The heavy field artillery in our service comprises 4.7″ and 5″ rifles and 6″ and 7″ howitzers. Their range is much greater than that of the pieces of the light field artillery. In a general way we may say that these heavy pieces will be used only against hostile batteries, earth works and material objects or against troops caught in some mass forma-

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tion. They will generally not be used against an advancing skirmish line or troops in proper formation to meet light artillery fire. There is no training to be given infantry except discipline to hold them to their duty in an earth work under fire by heavy field artillery, hence in this chapter we may ignore it.

Light artillery

With light field artillery it is very different. The light field artillery is what concerns us most in our training. The extreme range for which these guns are sighted is 6500 yards, and at all ranges under 5000 yards they can produce serious losses on infantry exposed to their fire. They use two classes of projectiles, shell and shrapnel. The high explosive shel has a much smaller radius of action than the shrapnel, but is very effective within this area. It is generally used to batter material objects and with high angle fire to get at men in trenches or behind cover.

Shrapnel

The shrapnel of the 3″ rifle contains 252 bullets and on burst these bullets are scattered over an area, roughly speaking, eliptical in form, 200 yards in depth by 25 yards in width. The flatter the trajectory, the deeper becomes the pattern made; the width practically does not vary. In other words the 252 bullets are scattered on burst over an area of 5000 square yards.

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Shrapnel

If these bullets were uniformly distributed there would be *one* for every 20 square yards or an area of 15 x 12 feet. They are, however, not evenly distributed, being thicker in a small area near the front end. This bullet will not penetrate the infantry soldier's pack at any range, so that when lying on the ground his pack affords complete protection to his spine and considerable protection to all vital parts except his head. The chance then of a man being wounded by a single shrapnel, even when inside the cone of dispersion, would only be about 1 in 80 if in the open and very much less with partial cover, as a trench, log, etc. The shrapnel bullet will not pass through one man and wound a second as will the infantry bullet.

Rate of fire

While artillery can fire very rapidly once the range data is accurately determined it requires considerable time to get into position and determine this data. Until then it is harmless.

Moving target

An erratically shifting target is hard for artillery to keep on. The fuze must be so set that the burst is at the proper height and distance to the front of the target to be effective, both not easy especially in case of a moving target, and the more erratic the move-

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ment the harder is the task of the artilleryman.

On the defensive

On the defense the man's protection is much better for he will generally have cover of some kind, but he has also a serious disadvantage, the line remains fixed, the hostile artillery soon locates it, gets its exact range and can place its own fire where it will do the most good. This is a decided offset to the defenders' diminished vulnerability. The use of high explosive shells by their moral as well as physical effect weakens any advantage the defense might have as concerns artillery fire.

Artillery targets

To determine the relative vulnerability of different infantry formations let us apply to them the target made by a bursting shrapnel. A line of skirmishers at the normal interval extending across this beaten zone would have 19 or 20 men inside its extreme limits; if in squad columns there would be 2 squads at least and generally 3 squads or 24 men and the target, being much deeper, would give the artillery a better chance as it is easier to get direction correctly than the point of burst.

In platoon columns there can be but one platoon in the same burst if fire comes from

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the front, and platoons are 4 squads strong, but the whole platoon may be within it. If, however, the direction of the artillery fire be very oblique, and the platoons are on a line, more than one platoon may be caught by a single burst but not all of any one column. **Artillery targets**

In successive thin lines, if the advance be made by one man from a squad, and the fuze and direction be just right, there may be 2 men in the cone of dispersion, which is to say that, in that formation, the artillery has about one chance in forty of wounding a man. If the advance be by one man from each platoon the artillery's chance, provided range and fuze are correct, is one in two that one man will be within the cone of dispersion of a given shrapnel and, if in there, there is one chance in 80 of his being hit; in other words, the artillery has one chance in 160 of getting one man and no possibility of getting two. Such a target will hardly draw artillery fire.

An infantry battalion in column of squads well closed up can nearly all be covered by the burst of a shrapnel. Such a target would likely draw many shots as would a company in this formation.

We can only win in the attack if our infantry can advance to the hostile position.

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The advance under artillery fire

We must get there, and as soon as practicable and with the least loss of life. We can not afford to lose too many in the advance or we shall be too weak at the end to drive the enemy from his position.

The infantry can not open fire until within rifle range of the enemy and should try to get much closer before doing so. In open country, however, infantry may be subjected to artillery fire while crossing the ground from 5000 yards to, say 1200 yards from the hostile position, with no chance to reply. The problem to be solved by the infantry commander is how to cross this zone without losing too many men and too much time.

In skirmish line

In skirmish line. The long advance in this formation is tedious work, and the target offered is sufficiently vulnerable to draw artillery fire. If no cover is afforded in the terrain the line is apt to suffer heavy loss and become more or less disorganized before reaching the point where it will take up the fire fight. Where the line of advance is crossed by ridges, sunken roads and other features of that kind affording cover, where the line can rest and to a certain extent reform, this formation can be used to advantage, especially if the terrain permits us to approach under

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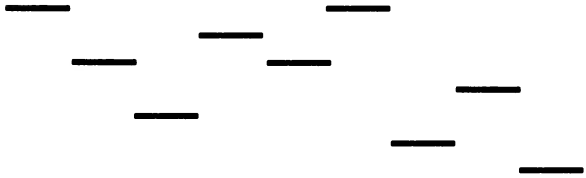
cover from artillery fire to within two or three thousand yards. If this formation be used in a force of some size, as a war strength battalion or more, the platoons should not keep on a line but in an irregular echelon formation.

In skirmish line



This makes a much more difficult target for the artillery. The distance from front to rear between any two adjoining platoons should not be less than 150 yards. The advance in skirmish line has the advantage of being in the formation that it will be necessary to have when you open fire and no changes are necessary and, if the enemy is enountered much sooner than expected, you are prepared.

The squad column. This formation was devised by our soldiers at maneuvers at Sparta and in California, where the ground in part was covered with thick brush. It was found an excellent formation to take when the skirmish line encountered these patches of

The squad column

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The squad column

thick brush. Since it was placed in the I. D. R. it has been understood by some as a good formation for advancing in the *open* against artillery fire. This is a mistake. It should never be so used. In this formation there will always be two squads, and generally three, in the burst of a single shrapnel, exposing more men to danger than if they were in skirmish line.

Marching in column of files is not as easy as in line on open ground. Remember good artillery is pretty accurate in getting direction. Most shots will be at the head of a column and if at the head of one, another on each side is included in the burst. Direction is much easier to get in artillery fire than exact fuze setting in the case of a moving target; this is another reason against the squad column, the target is deeper and thus slightly improves the chances of the artillery. This formation not only has no advantage on open ground, in an advance under artillery fire, but does have disadvantages.

Platoon columns

Platoon columns. In average terrain this formation will be more used than any other. The distance between these columns is great enough so that a shrapnel bursting between two may entirely miss both; it also permits a

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more or less erratic or zig zag course to be followed. Each column is lead presumably by a more intelligent and better instructed man than in the case of the squad. **Platoon columns**

These columns should never be on the same line but echeloned as explained for the skirmish line.

In most terrains there are little hills, clumps of trees, buildings and other cover of the same general kind. Platoon leaders must while keeping generally within their own zones of advance, rush from one cover to another where it is offered and, where cover is wanting, vary the pace and avoid advancing in a straight line.

Properly done this formation is one of the best. No time is lost, the columns are far enough apart to allow of advantage being taken of all the cover afforded, and the target is not, on average terrain, too vulnerable. It is not so good on flat open plains and it should not be used on such ground if the artillery fire is very oblique to the line of advance.

This form of advance requires that platoon leaders understand the theory and also requires much practice on different sites to give platoon commanders facility in leading

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Platoon columns

and skill in taking advantage of the cover offered. This is one of the things in which captains should give instruction during the indoor season with the aid of the sand table. In addition outdoor practice is most necessary. When this formation is adopted platoon commanders should know, if possible, before starting where line of skirmishers is to be formed.

Successive thin lines

Successive thin lines. This is by all means the safest formation on open ground in plain view of the hostile artillery observing station. The successive lines must be so far apart that no one shrapnel can reach two; this distance depends on the range but may be taken as 200 yards. With one man from each squad there will be two in the cone of a single shrapnel that bursts right; if the enemy is so situated that he can afford to fire at such a target and you do not want to pay the cost for such an advance, then send one man from each platoon in each line. Hostile artillery cannot afford to fire at such a target and if it does it will use up ammunition that will be much needed later and get small results for the expenditure.

The chief objection to this formation is the time it takes. In advancing in skirmish line

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or in platoon columns your firing line is established as soon as you get your first line up, while, with successive lines formed from squads, it takes the longer time required for a line to advance 1400 yards, and if formed from platoons it takes the time required for a line to advance 6200 yards.

Successive thin lines

This formation is also safe against oblique fire.

The training of the men for it is simple. Before the line starts the point where it is to be rebuilt must be carefully designated. That the line may be rebuilt without confusion or mixing, each man must be taught to keep his eyes on the next preceding man of his own squad or platoon to ensure his finding his right place in the new line.

After a few of the successive lines have reached the new position, they form a dense enough target to draw artillery fire. For this reason the position of the new line should be one affording cover from artillery fire if possible; if not, men must get cover by digging to protect at least their heads from shrapnel. Head cover and the pack will give them protection from being killed if not from being wounded.

If the advance in this manner must be for

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three or four thousand yards and the enemy has advanced posts or is likely to make an infantry counter attack, the advance over this whole distance can not be made at once but must be made by steps, growing shorter as you approach the enemy's position.

Artillery sweeping fire

The artillery will often sweep with fire an area being crossed by infantry. This is done by increasing or decreasing the range after each shot until the entire area is beaten. If this process be repeated often enough the artillery will get anything within this area not under cover. But this does not change the average number of shrapnel required to get a man nor does it render advisable a great expenditure of ammunition for meager results.

Infantry encountering this kind of fire should, as it approaches, lie down and get what cover is available and, after the storm has passed, move on.

The artillery may determine the exact range to some zone which the advancing infantry has to cross and, as the infantry reaches it, open a heavy and accurate fire. The infantry must cross this zone in a formation which decreases its vulnerability as much as practicable, consistent with other conditions, such as the hostile infantry fire.

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The enemy's guns can get you if they expend enough ammunition at the task; but can they afford the ammunition? Your own artillery may interfere with such an expenditure even if the enemy were willing to make it.

Artillery sweeping fire

A division deployed with 2500 men on the firing line, crossing correctly in thin lines a fire-swept zone from 4000 to 1200 yards, might lose 10% of this number from artillery fire and not have its advance even checked. With this open formation the loss is so small that the moral effect of it will be negligible with trained men. But a loss of 250 men at an expenditure of 160 shrapnel for each means 40,000 shrapnel. Even half that much would be more than could generally be afforded.

After the skirmish line is formed at the position for opening the infantry attack, the further advance from there is conducted as already explained. In skirmish line the hostile infantry is now by far your most dangerous foe, but the artillery will still be punishing you: your line must advance under both fires.

Forming skirmish line

Artillery fire will seldom be uniformly distributed along the entire skirmish line or continuous in its action. There will be blasts of intense fire, then a lull. The troops must

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Forming skirmish line

be trained to take advantage of these lulls to advance and to lie quiet during the periods of hottest fire. Of course, if for any cause the artillery fire is not very effective, the advance continues as against the infantry.

Our infantry must be taught to keep their fire superiority over the hostile infantry and to this object to devote all their skill and energy, but to avoid unnecessary heavy loss from artillery whenever possible. The hostile infantry is their real opponent, their real danger. As the opposing lines get close the losses from artillery fire become relatively slight, compared with the losses from infantry fire.

How to practice advance under artillery fire

How are we to get this training in most of our posts where there is no artillery to afford us the practice?

A man with a red flag indicates the position of a hostile battery, or, if the battery is concealed, a position that can be seen and is in the general direction of the battery. When the flag is waved rapidly it indicates a rafale or violent burst of fire; waved very slowly, it indicates slow fire by battery. In most exercises no flag is necessary; the instructor can give verbally the direction from which the artillery fire is coming in stating the

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problem; but in practicing the attack formation, under combined artillery and infantry fire, the flags should be used to practice platoon leaders in the rushes under such conditions.

Infantry as an artillery support

Infantry is sometimes detailed to support batteries that are somewhat separated from the rest of the troops and liable to attack by a rush of infantry or cavalry. Officers on this duty must thoroughly understand their mission. They must protect the artillery. Artillery can generally take ample care of itself if the attack comes directly from the front. The infantry commander must never mask the fire of the guns. Where he will place his men and what his general dispositions will be is a problem in tactics and the solution will vary with each case. These general propositions may be stated: his position must be such that from it he can effectively meet the attack; it should not be where he will get too much of the fire directed on the batteries; the command must be well in hand and the reconnaissance and observation groups so employed that he will have timely warning of the hostile approach and be prepared to meet it. His position will generally be to a flank and probably somewhat to the rear, never in front of the guns.

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Infantry as an artillery support

An occasional exercise in this work should be carried out as a maneuver. Something should be placed to represent the guns and a battalion or company assigned as their protection while another force is given the mission to capture them. This exercise should always be carefully umpired to see that the guns get credit for what they could do if fire is not masked. A problem of this kind is a small part of the work of infantry in war and when it comes it is a tactical problem like any other attack or defense. The reason for recommending it is that it affords excellent practice in security and information service and in combat when one position must be avoided. Combat exercises should be as varied as possible, here is another variety.

Fire superiority

The importance of fire superiority has already been dwelt upon as well as how much the effectiveness of hostile fire falls off as the effectiveness of our own increases. Infantry alone does not gain this fire superiority but it gains it by the help of our powerful ally and sister arm, the artillery.

Artillery fire over infantry

Battle fronts are too short for the artillery to occupy space in the line, even if this were a good place for it which it is not; it must fire over the infantry. All our men must

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be made to understand the effect of this artillery fire on the effectiveness of the hostile infantry, how much more effective this latter would be without the fire of our artillery, and the importance of having this artillery fire kept up to the last possible moment. Prove to them how much less we shall lose by an occasional premature burst than we should lose by the increased effectiveness of the hostile infantry if our artillery ceased to fire. The men must be taught that it it is the infantry that does most of the killing and that, especially at the very short ranges, we want all the help we can get to keep down this killing by the enemy's infantry.

Artillery fire over infantry

It has already been shown why the attacker's artillery has an advantage—the target is fixed. If the men are properly taught this there will be no trouble in getting them to want the artillery to fire over their heads as long as possible.

The connection that must be kept between the infantry commander and the commander of the batteries told off to his support is of the greatest importance, but that will be the function of a higher ranking man than this book is written for.

Tactical connection

How part of this instruction is to be given

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has already been told. It is believed that the best way to give the theoretical part is in small doses between exercises in the field—the little talks referred to before. Care must be taken not to give too much at once and to continue explaining until the men really grasp it. The theory should go along with the practical work; some of it can be best given in the non-commissioned officers' school and, as before stated, on the sand table.

How to instruct

How and when you do it is of less importance than *that* you do it.

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V

PATROLS, ADVANCE AND REAR GUARDS, OUTPOSTS

PATROLLING. The great importance of this work calls for the most careful instruction being given our men in this duty. It is not easy to teach, there is so little of it that can be done by thumb rule except in the simpler forms as visiting patrols. The first requisite is that the instructor know the subject thoroughly. As this work is in no sense a treatise on tactics that phase of the question will not be entered into here.

Teaching patrolling

In teaching this subject in the company the following course has been found to give good results. In the winter's school thoroughly instruct all the non-commissioned officers and selected privates in the fundamental principles; for example, the various formations, the necessity of the leader's determining his mission and knowing how to interpret what he sees, how to write a message, and how to decide many other questions.

Sand table work

With this oral instruction there should be work on the relief map or sand table. This latter is one of the most important aids in teaching this subject. The instructor with a

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Sand table work

small group at the table gives a simple situation and then, turning to one of the men, gives him an order as patrol leader to make a certain patrol on the ground represented by the map. Allow a short time for the section to think it over then question the leader. First get his idea of his mission and plan of action, question the others as to what they think of it, then the instructor gives his idea or concurs in that already given by the men.

Next the leader should be required to tell what he would do up to the time of moving out, the inspection he would make, what men must have and what they must not have, all the instructions and information he would give his patrol. The other members are called on in turn to point out any errors or omissions, then this part is discussed. The leader then points out his general route and gives the formation of his patrol along this route under the supposition that no enemy is encountered. The others are questioned as to their ideas of the correctness of the leader's decision.

The instructor should then take up the march in detail, something as follows: When you reached this point what would you do? How would you get from here to there?

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When you reached the bottom of this little hill what did you do? And so on, bringing out carefully and thoroughly how woods, bridges, defiles and villages are traversed, etc.

Sand table work

At the conclusion the instructor should go back to the start and at various points along the route have them see various hostile patrols and bodies of troops, bring out what should be done in each new situation, what messages sent, whether by one man or more, whether written or verbal, requiring in every case the reasons. The problem should be worked out once on the assumption that the patrol is in hostile territory and once as in friendly territory, the instructor bringing out clearly the difference in conduct. The mission should then be changed, as for instance from a patrol seeking information change the problem, on the same ground so as to give it a mission of screening.

The various phases of patrolling, in friendly and hostile territory, with a mission to gain information and then to prevent the enemy's gaining it should be worked out carefully on the same ground with only the necessary changes in the problem to bring out the differences in their conduct. It seems to impress these differences on the men the

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more lastingly, the more closely the problems resemble each other in other respects and when they are on the same ground.

Sand table work

After this series is once worked through with the men, other problems on different ground are taken. It takes considerable work of this kind to make the men proficient in the principles of patrolling. As soon as they are deemed proficient they should be taken out for tactical walks in patrol problems on the ground and there given problems to solve, the instructor acting as umpire. This is all work that can be done in most posts in the winter season by taking advantage of the most favorable weather for the outdoor part.

The instruction in the principles of patrol leading can be given to better advantage on the relief map or sand table than on the ground but the latter training can not be dispensed with, some of it must be given. Later on there should be much opportunity for further practice in the course of the combat exercises.

The work of the expeditionary patrol should be taught in the same manner. The work of the visiting and connecting patrols can be taught during the exercises in advance guard and outposts. They require very little

Other kinds of patrolling

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effort. The company as a whole should be frequently exercised as a strong patrol. There is one form of patrol, often very strong, that is of great importance and yet its proper training is frequently neglected—the combat patrol. These patrols are always thrown out when a command deploys for action and upon their proper conduct much depends. Their mission is always to prevent the firing line from being unexpectedly fired into from the flank and they fulfill this mission according to the situation, either by securing the flank by themselves holding off the enemy, or by observing and giving timely warning so that the support or reserves can be disposed to meet the enemy and thus ward off the attack.

Other kinds of patrolling

It must be thoroughly impressed on all what the mission of the combat patrol leader really means and that any position or formation of such a patrol, that allows the firing line to be so attacked is all wrong.

The following must be thoroughly taught:

The combat patrol

1. That when the patrol is so situated that it can see no more than the men on that flank of the firing line it is serving no valuable purpose.

2. That in practically all cases where it

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The combat patrol

is not in advance of the firing line it will not gain the necesary information in time to be of any value.

3. That the enemy must not get within effective rifle range of the flank of the line.

The strength of the combat patrol must depend on whether it is merely to observe or to offer real resistance and its conduct must be governed accordingly.

It is believed that the principles governing this work can be best taught, after a talk in the school, by a form of tactical walk, where the instructor can devote himself to the handling of this patrol; later on it is, of course, practiced in all battle exercises.

Combat patrol tactical walk

In the conduct of such walks the instructor takes his class out as such patrol and states his problem, the firing line being represented by a few men or even entirely imaginary, its progress being announced from time to time. The instructor then acts as leader, explains what is to be done and, assuming he has a platoon, takes his first position. He conceals his platoon and has observers out covering him and so placed that any enemy approaching will be seen in time, and that he will be in the best position to meet him. The number of sentinels out and their

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distance from the main body of the platoon depend on the terrain. He then carefully points out his dispositions to the class and explains why made and assuming in turn that the enemy is approaching from each of the likely directions, how his dispositions enable him to meet fully the case. The necessity for signal communication with the commander is explained and how he has provided for it.

Combat patrol tactical walk

He then discusses the terrain with reference to the next advance. As the firing line advances where he should next go, and how get there. A small patrol advances to the next position selected, finds it unoccupied and so signals back. The platoon then moves there and sentinels are sent out as before and possibly small reconnoitering patrols. The same discussion as before. Also from time to time hostile patrols are assumed to be seen and what should be done explained; when fire would be opened on the main hostile line, if at all. In fact the whole conduct of this patrol until the conclusion of the fight should be discussed, showing how it jumps from place to place, always covered by sentinels or small patrols, and how the firing line is always protected by it from surprise. He should point out how, in most cases, a mere marching along

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Combat patrol tactical walk

in a straight line would utterly fail, and impress upon the men the fact that the leader must use his head all the time.

Having gone through such an exercies once or more, the instructor solving the problem himself, he should then prepare the problem and, having stated it, call on the class to solve it step by step in the same manner. In all cases of errors in disposition the instructor assumes an enemy from a certain direction and has the class realize the error by their inability to meet the situation. The importance of keeping as many of the patrol as practicable well in hand must be emphasized.

Any combat patrol that is to offer resistance, from a squad to a company, is handled in the same way. The work of the smaller combat patrols whose duty is only to observe are likewise taught in the same way. The terrain and conditions bringing about their use instead of the larger ones make the problem easier.

The officers of the battalion should be taken on such walks by the major or some other officer. The company commander should conduct them for his lieutenants and non-commissioned officers.

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The men should also be practiced in the same way, as the combat patrol or covering detachment of a defensive line. This work is simpler, the patrol generally does not move from position to position. Its mission is the same as in the attack and even more important. In the defense very much depends on the selecting of the best position for this patrol and the correct dispositions being taken.

Combat patrol tactical walk

The case must be also considered of a patrol sent out by the defense for reconnaissance or screening which in case of attack becomes the combat patrol.

In a battle line with intervals, as in the case of the enveloping attack, connecting files must be used. Their object is to keep the commanders of the subdivision informed as to how the other is progressing. This can generally be done by forming points in the line joining the two inner flanks. In some cases this will not serve. Rules for this can not be given.

Advance Guard. In most commands too much of our limited field training period is devoted to work of advance and rear guards. It is important and must be taught, but if the other work which is the real foundation for

Advance guard training

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this is properly done but little more time is required outside of the maneuver exercises for training the enlisted men. Patrolling and combat form most of the work in these exercises so far as the men are concerned.

Advance guard training

There are many tactical problems that come to the officers in this class of work and they must know how to solve them. This is the work of the school for officers and should be effectively done.

The point is but a patrol with a special mission. The flanking groups are reconnoitering and scouting patrols but they involve some new features. When a recontre engagement occurs on the march one of the first things the commander wants to know is the strength of the enemy and his location; if deployed, where is his line? Where its flank? If not deployed, what is he doing? As the advance party deploys and pushes on, these flanking groups have the best opportunity to observe and by reconnaissance to gain valuable information. They also become, temporarily at least, combat patrols to the firing line. The men must be taught to carry out this mission without further orders and to do it correctly. In case small detachments attempt to delay our march, these patrols by

Advance guard rencontre

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flanking them can greatly hurry their retreat and prevent the delay of our column.

The general principle of advance and rear guards should be taught the company. This work can de done in part at the relief map and sand table, but the company should be exercised on the ground as the advance guard of a battalion and as the advance party of a larger advance guard, the other troops being imaginary. Afterwards two companies should work against each other, one as rear party of a rear guard, the other as advance party of an advance guard; also each as advance party in a rencontre.

Maneuver work

If the foundation has been properly laid there is no difficulty in teaching the application of these principles to covering detachments. If it has not been so laid and the men do not thoroughly understand patrolling in its different forms, it will be hard to teach it in these exercises.

In maneuver exercises problems involving rencontre engagements and engagements involving a marching column encountering an enemy in position should be had to train the officers in tactics and to give the men practice in combat exercises and in the patrolling necessary.

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Outpost training

Outposts. The general principles of outpost duty, the duties of sentinels, the general formation of an outpost line with its subdivisions must be taught the men indoors. The officers have much to learn in school or from books on this subject. With proper preparation by all the work outside is simple.

There are a few things that need special mention:

In the instruction work have a definite situation. If the company is to be exercised as a support take an outpost order giving the situation and general location of the supports. If any detachment, including the company, is to march beyond assumed existing covering detachments, see that it is properly covered by an advance guard. Judgment must be used in this, the smaller the detachment the weaker relatively the cover. Bear in mind where the other detachments are marching and the amount of cover they afford to yours.

When starting out instruct the advance where you are going, then have it go far enough in advance of that to cover you while you are making your dispositions after you have reached your destination.

From the company down make the dis-

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tribution of troops and assignment of tasks in an orderly manner, much as the guard is divided up for the post guard; do this while the detachment is still formed.

Outpost training

Full information of the situation should be given the men; the proper performance of their duty is impossible otherwise. Each subdivision commander must attend to this. The captain should give as much of the necessary information as practicable to the whole company, this saves time for the picket commanders and will probably result in the situation being better understood.

Where the outpost line should be located and how it should be disposed varies with many conditions. It is a tactical problem that the officers must be able to solve and must learn elsewhere than on the ground in the few hours devoted to this work in troop training.

Outpost practice on the ground

A little practice should be held by the regiment as a whole in forming outpost; one with the regiment as the outpost and one with the regiment as the whole command, one battalion forming the advance guard on the march. In the latter, a halt order should be issued and outpost formed from the advance guard battalion; when completed a

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march order should be issued by which the new advance guard passes through the outpost line. The outpost should then be assembled and take its place in column.

We do this very easily in map problems; try it on the ground, especially in rather close country.

Mounted scouts

The mounted scouts. While the mounted scouts have been taken from the infantry regiment there is still with each regiment a mounted detachment of orderlies. A few mounted scouts well trained are invaluable to an infantry regiment when operating alone. The commander of an infantry regiment, if wise, will see that these orderlies are trained as scouts and then when necessary he can so use them. Their most important and frequent use will be as the mounted point and flank patrols for an advance or rear guard and for patrolling to the front of an outpost line.

To be of any value they must be well instructed in these duties as described under advance guard. Being mounted they are much more valuable than a dismounted patrol for gaining information from the flanks and getting it back to the commander in time to be

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of some use. These orderlies can be trained in this work without interfering materially with their instruction in the care of horses and equipment and it can be given along with instruction in horsemanship.

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VII

MARCHING

ABILITY to march under war conditions is of primary importance in the training of infantry. There is much more marching than fighting in war and, no matter how well a man may be trained otherwise, if he is unable to reach the field of battle he is of no value as a fighting man.

Requisites for marching

That the infantry soldier may be able to meet the requirements in this respect he must possess the necessary health and strength he must be properly shod, know how to care for himself on the march, especially how to take care of his feet, and his muscles must be properly developed. It is also necessary that the responsible officers know how to conduct the march and to care for the men.

That the man has been allowed to enlist presumes the possession of the necessary health and strength and gives us a man who can be trained to meet all necessary requirements except when temporarily sick or disabled.

The soldier's shoes must be of proper

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construction, well fitted to the man and the leather kept soft and pliable. The shoe now issued to our army is good and with proper care in fitting leaves little to be desired. The fitting of the shoes is an important duty of the company commander and should never be slighted. The rules prescribed for this should be carefully followed. Every captain of infantry should have and carefully study the little book "The Soldier's Foot," by Lieut. Colonel Munson, Medical Corps.

Shoes for marching

No matter how well a shoe may be fitted if it becomes soaked with water and dries, without proper care, it will become hard and stiff and sore feet are apt to result. The men's shoes in campaign should be kept oiled. Neatsfoot oil should always be carried in every company's baggage and officers should see that it is used as needed. There should also be a supply of talcum or foot powder.

The socks are of nearly as much importance as the shoes. They, too, must fit. If too large they wrinkle, if too small they are apt to bend and injure the toes; in both cases the result is sore feet. Woolen socks are much better for hard marching than cotton, they keep the feet dryer and afford more of a cushion and consequently better

Socks for marching

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protection from injury. If the man finds that wool next his skin produces too great irritation he should wear woolen socks over a pair of cotton or lisle thread.

Care of abrasions

After a day's march the feet should be washed and any blisters and abrasions should receive proper attention. Adhesive plaster should be applied to all such, even to spots that are sore and the skin not yet broken; properly applied it is a great protection.

Rather than have the men treat their own feet it is much better that, after the day's march and camp has been made, a reasonable time be given the men to wash their feet and prepare for inspection. Captains should then carefully inspect the feet of all their men and send every man with the slightest injury to the regimental infirmary at once and have the injuries properly treated.

Men should be taught to do this for themselves but as it can be so much more surely and better done as above described the men should be permitted to do it themselves only in emergencies where sanitary troops are not available.

Protection of head and neck

In marching in very hot weather the men must be instructed in the importance of protecting the back of the neck from the direct rays of the sun. It would be well if our men

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were issued a small piece of cloth of suitable color with some means of readily attaching it to the hat to afford this protection. The Japanese soldiers used such an attachment in Manchuria with good results. **Protection of head and neck**

There must be an air space between the top of the hat and the man's head. The hat must be ventilated and in very hot weather a wet sponge or cloth or green leaves should be carried in the hat. The shirt collar, if not very loose, should be unbottoned.

Besides bathing the feet the men should bathe their whole bodies frequently. Anyone familiar with our "regulars" on the march and who has seen them break for the water to bathe as soon as possible after a day's march knows that it requires no order to get this done. But sometimes we must camp where there is no water available for bathing. Men should at least wash the crotch with a wet towel, especially if there is a tendency to chafe. Talcum powder should be used in such cases. **Bathing**

Men should be carefully taught the disabling effects of alcohol if drunk the night before or during a hard march, especially if the march be made in hot weather. The men must also be instructed to care wisely for their diet and to avoid the excessive drinking **Drinking**

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of water on the march. Too little water is as bad.

Drinking

All this instruction should be carefully given the men by their company officers under the general supervision of the regimental surgeon. The surgeon, with the approval of the colonel, should prepare an outlined scheme for instruction in first aid and in personal hygiene, having special reference to the soldier's care of himself in the field. The surgeon should then instruct such company officers as have need of the instruction; the company officers then instruct the men. A part of the examination of the company at the end of its indoor period should be on these subjects.

Personal hygiene

The muscles must be *properly* developed. It is not the strongest man who can best stand the march; it does not require great physical strength. The man's muscles must be flexible, he must be trained to use them and be able to use them without causing physical pain.

Muscle development

Marching as fully equipped infantry in the ranks is a very different proposition from walking along the road independently, and for the private in ranks with his load it is different from what it is for the officer with his.

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Many men of great strength are often what is called "muscle bound." Others have certain muscles overdeveloped others underdeveloped. When muscles usually unused are brought into play, or when a man is forced into a constrained position, if it be kept up continuously for some time, serious pain and discomfort results and often ends in a physical break down.

Muscle development

A good course in callisthenics or in gymnasium training is the best thing for the new man. It loosens him up, brings into play the different muscles, renders them flexible and gives the man control of himself. Then practice in marching, carrying his equipment, strengthens the necessary muscles and accustoms the man to the necessary constraint.

The training of the company for marching consists, then, in getting the men's muscles in proper condition by physical drill, in theoretical instruction as outlined above, and actual practice. Most of the actual practice is and should be gained at the regular daily drills and exercises. In these, if they are properly conducted, the man gets enough preparation.

March training

Devoting one day each week to a practice march is believed a mistake. In many of our posts a command going out on the roads can

Practice marches

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Practice marches

not leave them, there is no chance for instruction except very imperfect instruction in advance and rear guard work and practice in marching.

The physical part, the mere practice in marching can be just as well gained in the regular exercises, and to devote one-fifth of our field training period to the other instruction is excessive. It prevents some of the other necessary training being given and it ignores relative values.

What are wanted are men physically fit. Four to six hours a day of correct and rational training will make them as much fit without this weekly practice march as with it and give more time, all of which is needed, for necessary work.

Yearly march

There should, however, be one march every year of from 200 to 300 miles. This is necessary for instruction in camp expedients, to train the men to care for themselves on long marches and to give them experience in field service.

It would be better could it be held late in the season. The command should march to come point where they could have maneuver work and training in the larger units and on the ground more unfamiliar than their

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home reservation. But the march should be held, if it be only out and back.

Even with the men well prepared much of the success of the march depends on the officers. They must understand how to conduct a march and care for their men and conscientiously perform their duty. They must try to get the man's point of view, think of the man's comfort and health. **The officers**

Every officer who may be responsible for the uniformity and rate of march should carefully train himself to take a suitable gait and strictly maintain it. No one thing is more trying than an unsteady pace and many good officers are unable properly to lead a column on on the march for this reason. The halts must be regulated to suit conditions. In very hot weather or when climbing steep hills they must be more frequent than once an hour. **Marching gait** **Halts**

Discipline must be strict, no straggling allowed. Running to catch up, "backing and filling" is productive of a big sick report.

Whenever conditions permit the intervals between units should be increased, especially when the weather is hot and roads dusty. It renders a steady, uniform pace easier to maintain, and thus tires the men less.

The other rules for marches given in our

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service regulations should be carefully observed.

The first few days

Much of the success of a long march depends on the first two or three days, until the men get into the swing. Where practicable the first day's march should be a little less than average, the second a short one, after that our trained regulars can keep up the average march six days a week. On starting out it is the second day's march that is the most trying to the men. This should be borne in mind and all practicable allowances made.

An excessively long march should never be made just for practice. It does not fit the man for another but the reverse.

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VIII

THE NATIONAL GUARD

IN training the infantry of the national guard we have a very different problem from that of the regular regiments.

In these regiments the same proportional attention should be given to those things that should be habits as in training the regulars and the necessity for varied instruction in order to keep the interest of the men is even greater.

Scope of the instruction

My observation leads me to believe that the greatest weakness of many of our national guard captains lies in the narrow scope of the instruction given and in its monotony. There is a lack of variety at each meeting. The men lose interest.

When the recruit first joins the guard he generally does it for the best of reasons and is interested in the work. But after going to the armory for a few times and drilling in a few movements over and over again he loses interest, then he cuts drill and possibly ends by trying to get discharged.

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There are many things that should be taught, and you can only hope for success by varying the work and holding the interest of your men. Do not put more time than necessary on non-essentials.

The recruit

Of course the recruit must first be taught the school of the soldier and he must have the necessary instruction in close order drill. But even early in his course there is a chance for variety; early in the game give him a rifle for part of the time and as soon as he has had a little drill in the manual of arms teach him sighting and then pointing and aiming drill. As soon as he is far enough along let him fire a score at gallery practice each drill. At first devote the most time to drill without arms but increase the time with arms until all the drills are with arms and you get him in the company for close order drill.

The following should be taught as carefully as practicable:

Essentials for the guard

1. Target practice on the range. If the gallery practice and pointing and aiming drill recommended below be well done, comparatively little of this will answer. But it cannot be omitted, every man should have some practice. Where possible some of this practice should be in "field firing." In many

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cases there is a tendency to give known distance firing an exaggerated value to the neglect of other training.

Essentials for the guard

2. The mechanism of the deployments, the advance by rushes even after the line is mixed, control of fire, and all these directed by signals only; verbal commands should not be used.

3. Estimating distance must be taught.

4. Pointing and aiming drill and gallery practice, so that the man will always bring his piece up properly, look through the sights and pull the trigger only after careful aim, must be practiced until the necessary habit is formed.

5. There must be frequent close order drill. Knowledge of this is necessary for the orderly movement of troops and it is our greatest aid to discipline. But to be an aid to discipline it must be exact, otherwise it has a reverse effect. It is just as easy to do it correctly as to do it approximately if you only teach it so at the beginning and then give the subject attention ever afterward and do not allow the drill to become sloppy.

6. The use of the bayonet must be taught and practiced.

7. The men must be taught simple in-

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trenching and the various uses of sand bags.

Essentials for the guard

8. First aid and personal hygiene.

9. Patrolling; especially the combat patrols and those with advance and rear guards and outposts. As many as possible should know how to read a map.

10. The company musicians and two or three privates should know the flag signalling.

But the captain may say: all these are practicable with the regulars who have all the time needed and daylight in which to work and ground to work on; but how are we to do these in an armory at night?

Required equipment

Every armory should have a place fixed for gallery practice if it is only a backing for the target against the wall in one of the corners. And no company should be without a sand table; a relief map is also very desirable.

With this equipment let us see what we can do.

The ordinary drills of course are on the armory floor.

Estimating distances

The principles of estimating distance should be taught the company and the men urged to practice it for themselves. Groups are formed and go anywhere it is convenient for this purpose. Occasionally, if found

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practicable, the company goes out. Officers and non-commissioned officers in this same way should learn to use the range finder.

Patrolling can be well taught on the sand table or relief map. Pile up your sand, forming any desired terrain; with yellow strings mark the roads and with blue ones the streams, little bridges, etc., can be made with a jackknife, houses represented by blocks, forests with little pieces of evergreen—you have your outdoors. **Patrolling**

A scale must be provided and one end of the table marked as north.

The instructor takes a squad to the table and starts out, for instance, by stating: "Smith, your regiment has reached this point (just off the table) moving north in hostile territory. The colonel sends for you and gives you this order—'Corporal, I have heard rumors that there is a force of the enemy in that village northeast of here. I want to know whether that is true. Take your squad and move along in the general direction of this main road, find out and report. The regiment will remain here for several hours. Be back here by 3 P. M., it is now 10 o'clock.'" The instructor tells Smith to do just as if he were on the ground. Smith inspects his

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squad, gives his instructions to his men and
Patrolling then proceeds. He can tell the instructor his formation, and what he does from time to time, or each of the men, provided with a match and a scale, may be required to move his own match. There are many ways of doing it. The instructor must give information of the enemy, either orally or at certain points place lead soldiers or something to represent the enemy.

The thing aimed at is to find out how Smith and the other men would act under various conditions, point out their errors and show them how to correct these, and give the reasons. An infinite number of such problems can be devised.

This sand table is especially good for teaching the work of a combat patrol. Form your field of battle and along one flank have a varied terrain with houses, clumps of trees, little hills, etc. The instructor moves a light rod along to represent the firing line and the patrol leader solves his problem. Whenever any error is made the movement stops until the mistake is pointed out and explained.

In the same way are treated advance and
Security rear guards of the strength of a company and a company as advance or rear party. Out-

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posts are established, the sentinels being represented, and routes of the patrols selected.

Entrenching can be taught by constructing trenches to scale on the sand table terrain. I have seen elaborate field works with bomb proofs constructed in this way by the men of one company, but this is not recommended for any but the officers; it is better to limit this work to the simpler trenches. With a round piece of stove wood for a log and with a good jack knife, or better a hatchet, you can make your loop holes for the head log. With a lot of small Bull Durham tobacco sacks, filled with sand, you have your sand bags, the varied uses of which should be taught.

Entrenching

The officers should have a war game map for their patrol problems and for war games.

Bayonet fencing should be practiced if you have the necessary equipment. If not, and a place is available for it, suspend by a rope something to represent a man, a sack full of straw will do, so that it can be made to swing through a small angle back and forth and to right and left. Let the men practice the thrusts, lunges, cuts, etc., against this, another man giving the dummy a motion. This should come after training in the bayonet exercise.

Bayonet fencing

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I would propose a system something like the following for your company drills:

Recruits by themselves until they can be put in the company; their work has already been discussed.

Essentials at every drill

After the company is formed give 15 or 20 minutes of snappy, precise close order drill then a little manual of arms. Then have the company deploy, two or three times at least, from different formations. Then go through an attack formation the best you can, all the company in the line, no support, an advance of 40 yards being represented by one of five, etc. Then try it holding out a support and putting it in so as to mix squads and advance as before. Remember, no verbal commands, all this to be done by signals.

Have little posters on one wall of your armory at the proper height; have a few minutes pointing and aiming drill, impressing on the men the importance of always taking careful aim.

Group work

Then divide your company into small groups. One group at the sand table, one receiving first aid instruction, another bayonet work, another gallery practice, etc. The group at the sand table may be larger than the others and may stay there for the rest of the

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evening, the others should change every 15 or 20 minutes. The sand table group should change each drill and once during the night if practicable, that is, if there is time for one group to finish its problem and give another a chance that same evening, it should be done. Nearly all the company should fire a score at the gallery every night.

Group work

If there are a few men in the company who are poor at the manual of arms they can be put in one group and be given one of their turns in drill in the manual.

One group may have to be taught how to make the pack. Instruction in guard duty may be necessary for another. Verbal instruction can be given in several subjects with great advantage where a good instructor is available; in that case all except the group at the sand table can be assembled.

The whole course cannot be covered at one drill. The captain should so arrange his groups that all in turn get instruction in the whole course, that all get a variety each night, that where men have a special deficiency it receives attention, that the first part, the essentials for the whole company, be never slighted, and that as many as practicable of the company get gallery practice at every drill—one score will answer fully.

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Group work

Owing to the time it takes to complete a problem or task on the sand table, often but one group can use it in an evening. The size of the group working should not, however, be increased. Only small parties can be advantageously instructed. For this reason the sand table must be worked to the limit and because of this and the number of things to be taught on it and because some officers are not very expert in forming suitable terrain on the sand table, it is an advantage to have the relief map also. The latter can then be used for patrolling and work of covering detachments and the sand table for the field engineering.

Brush work

At most stations small twigs can be collected and used to make hurdle revetments, fascines and gabions for use on the sand table. They can be constructed to the reduced scale and this brush work learned nearly as well as outside with normally sized faggots.

Have the officer or non-commissioned officer best qualified give the instruction in each class. The instructor has much to do with success; some are specially good at one thing but poor at another.

With such a course of instruction well given throughout the year and with a week

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or ten days of good camp work annually, and suitable school work for the officers, there is no reason why the national guard should not possess the efficiency required of it to be a valuable military asset.

Sufficient of the callisthenic or setting up exercises for the proper development of the soldier should be shown the recruit and the latter told of the advantages of practicing them for a few minutes every morning or evening, or both. Tell him what it will do for his health and appearance and urge him to get busy. There is no use drilling these exercises in the armory. A few minutes once a week or less often will do no good and wastes drill time of which the guard has none to spare.

No callisthenic drill

The detailed sergeants should help in all drill work but especially should be valuable in teaching camp expedients, care of equipment, etc.

I believe that in nearly every state the officers pursue a theoretical course each winter and generally there is a non-commissioned officers' school as well. In the latter school there should be thoroughly taught, giving importance and precedence in the order stated:

Use of schools for N. C. O.

Infantry Drill Regulations,
Manual of Guard Duty,

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Small Arms Firing Regulations, and parts of Field Engineering.

Use of schools for N. C. O.

Parts of the Field Service Regulations should be read carefully in connection with the study of the same subject in Infantry Drill Regulations. If more time is available map reading should be taught, and, if time remains, then applied minor tactics on the map. Attempt no more than you can *thoroughly* do in the time available and make the course progressive.

Schools for officers

The school for officers should first cover thoroughly the above course but take more of Field Service Regulations and include the Manual of Courts Martial. Map reading should be thoroughly learned by all and the remaining time put on tactics. Beginning with minor tactics study some good problems with their solutions, then solve others to be criticised by some competent person. I have found it satisfactory to use problems in this way in connection with the drill regulations. Study a subject, for example an advance guard, then read a few tactical problems on the same subject, then try solving one, and so on.

As you progress use larger and larger forces. But do not attempt the brigade until you can handle the regiment correctly. Do

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not cover too much ground in one season and acquire only confusion. Each term get something positively fixed in your mind so that you can use it; there will be more winters. **Schools for officers**

Much attention should be given to acquiring facility in giving correct verbal orders.

Studying tactical problems correctly solved and solving others for yourself is the best way to learn tactics after you know the principles laid down in your manuals. Beware of "normal form" solutions, they are misleading and apt to be wrong. Apply general principles with common sense. Advantage should be taken of the officers detailed as inspector-instructors to plan and conduct this work as well as to help in the instruction of the men. Only those thoroughly competent for this instruction work should ever be detailed with the national guard.

There should be a camp of instruction each year. If properly conducted this is very valuable.

Nearly all national guard infantry needs training for individual men and officers and work in the company, battalion and regiment. When formed in divisions or larger **Camps of instruction**

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Camps of instruction

forces for maneuver campaigns the men in ranks and junior officers get but little instruction. Except a little camp experience, it is chiefly walking, the object of which they know nothing, and most of the officers are not yet ready for this class of work. It is a camp of instruction, not a campaign, they need. They must apply on the ground what they have learned in the armory.

I believe the best results can be obtained from camps of not more than three regiments The special needs of each regiment should be considered in forming the program. The work should be planned so as to give instruction to each in the most important things in which it is deficient. Special consideration should be given to what can not be learned in the armory and must be done out of doors.

Most of the program should be made up of practical drills and exercises in which all get instruction from private to colonel, and where their interest can be held and the best instruction given. Small maneuvers of company, battalion and regiment are what are needed.

Tactical walks for officers and non-commissioned officers are an excellent means of instruction—these supplement the other exercises.

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The big maneuvers are very largely for general officers and very little for regimental officers. We need the foundation before we build the superstructure.

Camps of instruction

As much ground should be covered during the camp as is consistent with efficient instruction. No attempt should be made to cover the whole art of war in a week as it only results in confusion of ideas and gives little or no benefit.

If the law would permit a few national guardsmen to serve for short periods in the regular army it would help greatly towards uniformity of training and improve the non-commissioned personnel of the guard. These men should be allowed to so serve for three months during the company's field training period or for one month during the indoor season; not more than five should be assigned to any one company. They should receive the regular's pay and rations and, if joining for the three months period, one complete service uniform; the one-month men should bring their uniforms with them.

Service with regular companies

This privilege should be granted only to men who have still one year more to serve in their enlistment in the guard and who are recommended by their captains. They

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Service with regular companies

should be excused from post guard and all fatigue duty and in place of that receive additional instruction work each day. In order to obtain the most benefit, these men should be attached to those companies whose training is the best; in an indifferently trained company they would get some benefit but it would be little in comparison with what they would receive in the other class.

This recommendation is made from having recently seen the results of having a few men of the national guard join an excellent regular company for a short period. These men came without pay and themselves paid their board while with the company.

There would probably be no large number who would so serve, but there are some and we are in no condition in this country to overlook even small helps that will contribute towards fitting us for war.

Value in war

Owing to the small peace strength of most of these regiments and the large number of recruits they must take in on the outbreak of war, their value will depend on the time they will require to be fit for the field at war strength. They have the organization in working shape. Their officers will, in the majority of regiments, be men who have had

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considerable training. If they will follow a logical and systematic course of training in peace, the officers will be familiar with it and will be experienced instructors, and all their old men will have the instruction to a certain degree so that they can help drag up the recruits. All this will help to shorten the time required to fit them for the field and every day thus cut off adds greatly to their value.

Value in war

Without such training their value is small, for no regiment should be accepted except at war strength and a national guard regiment so filled up, without experienced instructors who know the course, will take nearly as long to become efficient as would a new regiment.

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IX

INSPECTIONS

MUCH can be done to improve the training of our infantry by the inspections. Most officers greatly dislike to have an adverse report made by an inspector on their commands. Fear of such a report sometimes works to the detriment of sound training and sometimes to its improvement.

Influence of inspections

A captain once asked why he put so much time on exercises of obviously little consequence and so little time on others more important, replied: "Blank will inspect this year. He always pays great attention to such and such an exercise and never examines the company in the others. I want a clean record on this inspection."

We have all been influenced as was this captain. Even if we do not care personally, loyalty to our colonel or to the post commander leads us to consider what the inspector will require.

The author has no intention of criticizing adversely the Inspector General's Department; its inspections have steadily im-

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proved in recent years and become more rational and consequently more beneficial. His aim is rather to point out the place of the inspections in the year's training and to suggest how, in connection with the methods of training proposed, they may be made both searching and helpful toward real proficiency.

Influence of inspections

In the annual inspection it is evident that in the time available the inspector cannot examine an organization in everything it should know; he must choose certain things and judge from those of the training of the company or regiment.

The annual inspection

In making this choice the relative importance of the subjects must be kept in mind. Of course every company must be tried out in the combat exercises and in all the things that should be made fixed habits. It is of equal importance that no stress be laid on non-essentials. For the rest, he should select certain important things which every company should know and inspect it thoroughly as to its proficiency in those, examining the various companies at a post in different subjects so that a captain would feel that anything in the whole course might fall to his lot from properly making the pack to establishing an outpost at night.

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The annual inspection

The inspector should make free use of the war game map, tactical walks and every other recognized means of instruction to find out how well the officers and men of the regiment are instructed and what class of work each organization is doing.

In order to be fair to the organizations inspected the annual inspection should be made late in the season. It should never be made before the officers have had a fair show to instruct their commands.

Company examination

The above inspection by an officer of the Inspector General's Department should not, however, be the only one. At the close of each period of training there should be an examination of the organizations on the work they are supposed to have done. The last of March or first of April the field officers of the regiment, as a board, should examine the companies on the results of their winter's work; a similar examination should be made

Battalion examination

at the close of the period of company field training. When the battalions have finished their period of field training the colonel and lieutenant colonel should form the board to examine them. If the brigade commander be thoroughly posted on all matters pertaining to infantry training his presence at the ex-

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aminations and careful supervision of the work cannot fail to be very beneficial. His supervision should not, however, lead to restriction of the proper latitude which should be allowed subordinates; his mission should be to see that the instruction given is correct and that the whole course has been satisfactorily covered.

National guard inspection

The same general principles apply to the inspection of national guard organizations. If anything is found wrong with them the inspector should not keep silent at the time and content himself with rendering later an adverse written report; he should tell the officer being inspected what is wrong and take pains to show him how to correct the error. A helping hand, offered in the right spirit, will always be appreciated.

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X

TRAINING A NEW REGIMENT

Need for quick training

IN this country we are liable to have the necessity forced upon us of turning out troops in the shortest possible time. We shall have to use troops not fully trained; we shall have to employ them as soon as they can be used at all. Of course this system will be frightfully costly in blood and money. In war imperfectly trained troops must pay with their lives for all mistakes. The better trained they are, the fewer mistakes, the more skill they possess the more cheaply can any desired result be obtained.

It is the duty of all officers who may be charged with the responsibility of preparing this mass of untrained men for war service to give the subject careful thought, to study the question carefully and to be prepared on short notice to take charge of such work and produce the best results possible in the shortest time.

Success in this hurried training can only be secured if the man in charge thoroughly

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FIELD INSTRUCTION FOR NATIONAL GUARD.

G.O. 16, HQRS. BROWNSVILLE DISTRICT,
Fort Brown, Texas, July 12, 1916.

1. The following instructions relative to the training, supply and sanitary care of state troops called into the service of the United States and serving under the district commander, are published for the information and guidance of all concerned:

2. There will be appointed by this office for each regiment an inspector-instructor to act as the representative of the district commander, to have charge under the regimental commander of matters pertaining to the instruction and training of the troops.

3. Assistance will be rendered to inspector-instructors by commanding officers of Regular troops in the vicinity in this important duty of training of Militia. They will exercise a friendly interest in their progress. At the request of commanding officers of Militia they will, if practicable, detail officers and non-commissioned officers for theoretical or practical instruction, this to be in addition to their ordinary duties. They will give opportunities for combined drills.

4. An important part of such instruction is paper work, to instruct in which a Regular officer will, when necessary, be detailed for each regiment of Militia until it is properly understood by adjutants, quartermasters and company commanders.

5. It is desired that the training of the Militia regiments be expedited as much as possible. No ordinary obstacle, such as weather, should be allowed to interfere with it.

6. It is made the duty of inspector-instructors to furnish weekly reports to this office stating the progress that has been made and a schedule of drill and training for the next week. They will also call immediate attention of the district commander to any serious deficiencies at any time in equipment or food.

7. In this connection attention is called to the schedule of drills adopted by the inspector-instructor of the Texas brigade and approved by this office.

8. The form for the monthly inspection of Infantry equipment devised by Brig. Gen. George Bell, by which a report is made each month by company commanders of the equipment and its condition, will be used.

9. The district commander intends to institute eventually competitive tests to determine what companies are the best instructed in the command. The result will be published in general orders.

10. It is enjoined upon all company and regimental officers to fit themselves for their positions by assiduous study and practice. The inspector-instructors should at time form the officers into classes for drill, in order that the regimental officers, by being in ranks, may discover the difficulties which the soldier has to overcome and the advantage of having expert drillmasters.

11. Officers who plainly are not on to their job after a sufficient period of preparation will be reported to this office in order that they may be discharged.

12. The soldier is not fit for fighting until he can shoot. In an emergency the quickest way of teaching men to shoot is by the system of firing with full charges at miniature targets (Special Course B). When time is lacking this system will be adopted. It should be preceded by a complete course of aiming and position drills.

13. A common fault in Militia or volunteer troops is a failure to charge up the men with the clothing issued them. Inspector-instructors will watch this carefully.

14. Inspector-instructors will see that the troops have a suitable drill ground. Otherwise a report of the fact will be made to these headquarters.

15. In expediting instruction the intelligence of the soldier should be utilized. To do this instructors will require men to study text-books of drill, or in their absence print leaflets, using the mimeograph, of such things as guard duty, manual of arms, bayonet exercises, etc.

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Gives absolute protection against the dazzling ra
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Amber with Green Dimmer.

Sold Everywhere—Or sent direct postpaid on
ceipt of ONE DOLLAR.

CHICAGO EYE SHIELD COMPANY
2300 Warren Avenue Chicago Il

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Sam Houston, Texas, of a son, Pomeroy F., to Lie
Mrs. Philip L. Thurber, and a grandson of Mrs. Ge
Thurber, of La Crosse, Wis.

Miss Caroline Fee, of Rochester, N.Y., house guest
and Mrs. Archie Miller, left on Wednesday for her hom
Lewis Foerster, Mrs. Clemens W. McMillan, Mrs. Wil
Forsyth and Mrs. Taucher attended the moving pictu
dancing held on the roof of the National Press Club on
evening.

Mrs. Richard C. Burleson entertained at the Office
on Monday with an informal dance. The many friends
McCloskey, wife of Major Manus McCloskey, will be
hear of her meeting with an accident last week, having
sprained her ankle.

Major Allie W. Williams entertained at dinner Mc
the Army and Navy Club roof for Mrs. Richard C.
Mrs. John Walker, Mrs. Sidney L. Cappell, Dr. Nc
Kirk and Lieut. Walter W. Vautsmeier, C.A.C. Col.
Charles T. Menoher had as their week-end guest Mr.
berly, of Philadelphia, Pa.

Need for quick training

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FORT TERRY.

Fort Terry, N.Y., July 18

An informal dance was given July 8 by the officers
of the post in the barracks of the 100th Company, w
present at Plattsburg. Miss Landers left last week
visit to her sister-in-law, Mrs. Landers. Mrs. Cornell
been visiting Capt. and Mrs. Wertenbaker, left las
for Fort Myer. Lieut. and Mrs. Sumner are enjoyi
from Mrs. Sumner's mother, Mrs. Givens, of Tampa,

Mrs. Eddy, wife of Captain Eddy, who is on du
camp, with her daughter arrived last week and w
an apartment during the encampment. Lieut. and
ner entertained informally at a dance and supper Tue
Sampson Scott, son of Capt. H. H. Scott, U.S.A., r
turned to the post Saturday. Lieuts. and Mesdame
and Lee entertained at a bridge and Welsh rabbit pa
day evening for Mrs. White, Messrs. Thatcher,
Springan, who are ex-Plattsburgers and are acting
with the boys' camp. Mrs. Barlow and son return
day from a week's visit to her sister, Mrs. Jarma
Andrews.

Lieutenant Sampson left Monday for Fort Sloc
where he will take the physical examination for e
the Aviation Corps. Colonel Chamberlain, I.G., an
Kilbourne, G.S., Eastern Dept., inspected the camp
day and made short talks to the cadets, after a rev
brigade. The boys' camp, which started here on Ju
decided success, and the physical condition of the
cellent. The officers are quite elated over the splei
ing made by the boys at Infantry drills, parades ar
They have progressed to such an extent that they
drilled in extended order, although they have bee
only for about ten days.

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appreciates his task and follows out a well prepared and systematic course.

There are three phases of the problem: Our regular regiments must be raised from a strength of about 65 men per company to nearly 150. The national guard regiments, less well prepared, will have, as a rule, to stand a still greater increase of new men, and there will be hundreds of entirely new regiments to be raised.

The commander

In outlining or suggesting a possible course to be pursued in such cases let us take the new regiment. The regiment must first be enlisted, organized and equipped. This first step will not be considered further than to say that in its organization it is absolutely necessary that its commander be an active, competent officer, one who can train it and prepare it for its work. In no other way can the regiment be prepared to do anything within a reasonable time.

To appoint an incompetent commander to such a regiment would cost many lives, would be a crime closely resembling murder in the second degree.

An effort should be made in every new regiment to have a reasonable number of subordinates competent to act as instructors.

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General principles of training

Under modern conditions there is a minimum amount of training that is absolutely necessary before an organization can be put in the field. The number of men lost to an organization from disease depends on how well the men are trained in caring for themselves and how well the officers do their part.

Time is the all important element; we must have these organizations in such shape that they can be used as quickly as possible and be as nearly good as possible. Of course they will constantly improve in the field and become excellent, but they will have to be used before that state is reached. The occasion for organizing such regiments will only arise in case of great national danger, when the utmost can be demanded of all. Hours of work should then be all that can be profitably employed. Most of the recruits will be men accustomed to at least eight hours work a day.

All that has been said previously as to variety in the work, keeping up the men's interest, explaining and giving the reasons for things done, applies even more to a new volunteer regiment than to our regular companies. Essentials only must be taught at first, bearing in mind that discipline is most

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16. To give the men a proper military carriage there should be in each regiment setting up exercises for ten minutes after reveille. This can be varied with practice in running.

17. Much stress should be laid on precision in drill. It means discipline, and discipline means efficiency in battle and on the march.

18. The course of drills should be interspersed with occasional combat exercises, contests in athletic and military exercises and reviews. These things give variety and interest to the instruction.

19. In connection with the supply arrangements of Militia troops, quartermasters, ordnance officers, medical supply officers and other supply officers are informed that it is their first duty to see that Militia troops are properly supplied. To accomplish this it is not sufficient to wait for the arrival of requisitions. They or their agents must visit the camp of the Militia and ascertain in what respect the Militia organizations are deficient and see that the articles are supplied. If the requisitions submitted by the Militia contain errors, and the emergency warrants it, issue will be made first and the requisition corrected afterward.

20. Issues of clothing and equipment should be made in such a manner that drills will not be interfered with.

21. Officers detailed as quartermasters in Militia camps are considered in the light of inspectors and instructors in the matter of supply as well as supply officers. They should particularly watch the handling of the ration and its proper care and preparation.

22. It is desired to impress surgeons with the fact that the most important thing to be accomplished when Militia are mustered into the service of the United States is preparation for war in the shortest possible space of time. On this in a great emergency the fate of the nation may depend. Surgeons are therefore desired to so adjust their demands upon the troops as to interfere with hours of drill and instruction as little as possible.

23. Medical and other officers of regiments will be held strictly responsible for proper sanitation, for the condition of latrines, disposal of garbage, etc.

By command of Brigadier General Parker:

F. R. McCOY, Captain, 3d Cavalry, Adjutant.

General principles of training

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It is only offered as a possible help.

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General principles of training

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FORT TOTTEN.

Fort Totten, N.Y., July 17,

Capt. L. C. Brinton, detailed in Q.M. Corps and or
Brownsville, Texas, as assistant to Chief Quartermas
for station Thursday. Lieut. H. K. Loughry is now
master here. Mrs. Brinton will remain at Fort Tot
porarily.

Mrs. Robinson had one table of bridge on Wedne
Mesdames Gilmor, Wildrick and Campbell. Mrs. F
of the south shore, spent several days last week w
Gilmor. Lieut. and Mrs. Loughry had as their gu
the day Mr. and Mrs. Marcellus Woltz and Mr. F
Voorst, of Monticello, Ind. Mr. Van Voorst came F
his son, Marion Van Voorst, who has entered West P

Mrs. Loughry's luncheon guests on Saturday were
A. Helm, of Oyster Bay, and Mrs. Robert Beresford,
laston. A dinner was given aboard the mine planter
O. C. Ord on Friday by Lieutenants Colliday and W
the Misses Berry, Miss Griffith, Lieutenants Matth
Griffith. The party attended the hop later. Anothe
the same night was given by Mrs. Campbell for M
Robinson, Wildrick and Gilmor, whose husbands are
temporary duty.

Lieutenant Lane has returned for duty. Mrs. Lane
baby are at Jamaica Plains, Mass. Mrs. Frank Geer
from Wichita, Kas., on Friday to attend to the pa
her household effects. She was the guest of Col. E
Haan for several days. Mrs. Milton W. Curry, of K
Fla., is visiting with Mrs. Brinton. On Sunday M
ton's guests for the day were Mrs. Jefferson B. Bro
Miss Susan Browne, of Key West, Fla., and Mrs. Z. C
New York. Mrs. Brownlee returned from Niantic, M
Saturday. Miss Clark is with her for a little visit.

JAMESTOWN.

Jamestown, R.I., July 19,

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essential and the use that can be made of close order drill in obtaining it. Those things that should be a habit must be drilled carefully and frequently. Other essentials may be hurried through for the first time, to give the men the best general idea possible in the shortest time, and then repeated and perfected as time and opportunity offer.

General principles of training

As a rule our men will be intelligent and quick to learn. Every little taught them, if they have understood the reason for it, will help them to do what is required even if their instruction is not complete. With such volunteers much instruction should be given not as a drill but as a sort of lecture or talk. The average American works better when he knows the why and the wherefore. Remember how different are his new life and surroundings from what he is accustomed to and how very little the average American knows of an army and how much of that little is not so.

In submitting a proposed schedule of training it is fully appreciated that conditions will vary greatly and any schedule must be suited to conditions as they exist; it is doubtful if the one here proposed would ever exactly fit. It is only offered as a possible help.

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It is assumed that the colonel is thoroughly competent and that there are several men in the command with some military training, such as ex-regulars and national guardsmen and those who have had training in a college battalion. This latter assumption is a safe one in this country.

Company cooks

It is very probable that every company will have a cook that enlisted as such and knows something of the art. But handling the ration and army cooking have features that are different from what he is used to unless he has been trained in the army. The company kitchen must be correctly run or training will be difficult. Discontent and a big sick report are fatal to success.

The first thing, then, is to instruct the cooks and mess sergeants. Some one must be found competent to do this and he must look after the kitchens, correct mistakes and give instruction until they are all running properly. The new captains must learn how to look after this work properly if they do not already know. If the colonel can find nobody else to do it he must do it himself. It must be done. It is a very important part of the foundation upon which success must be built.

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The necessary records and papers should be properly kept and made, both at regimental headquarters and in the orderly room. This is important but not so much so as the kitchens. The mistakes in paper work only cause annoyance and confusion off the battlefield and possibly will lose somebody some money; but the other causes loss of life and prevents efficiency. This work should be properly taught. Some competent non-commissioned officers or officer should be given the task of instructing the clerks and first sergeants. It is not difficult, at least the essential parts, and it should be promptly attended to upon organization but so as in no way to interfere with training. An ex-regular sergeant major, first sergeant or clerk would be very valuable here. So far as possible such a man should be made adjutant of every new regiment of volunteers. His value as an instructor in many things would be great and he would save the colonel much trouble and annoyance.

Paper work

From the first day of training the band should be turned over to the surgeons for thorough instruction as auxiliary sanitary troops. At least two hours a day should be devoted to this work until they become

Band

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proficient, after which, an hour or two a week, to keep them so.

Band

The band must also receive the necessary drill so that it can be maneuvered as such. Callisthenic drill, practice in marching, care of themselves in the field, individual cooking, and tent pitching must be taught. Three hours daily should be devoted to this instruction until satisfactory results are obtained, after which only occasional drills are necessary. This may interfere somewhat with their music, but that can wait.

Surgeon

The regimental surgeon must also carefully train his detachment. His officers must not only be doctors but medical officers; his men must be trained for field service as well as for hospital attendants.

Machine gun company

Mounted detachment

The training of the machine gun company and mounted detachment must begin from the start and follow generally the lines proposed below for the companies. More attention must be paid to their tactical instruction than even to that of company commanders. They must know their function and how to do their part. The instruction of these men as to field service, care of themselves, callisthenics, cooking, etc., must be the same as in the company. They must be

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taught how to care for the animals and in the case of orderlies how to ride and to scout.

Musicians

The company musicians will receive the following instruction with their companies: callisthenics, first aid and personal hygiene, individual cooking, tent pitching and rifle firing. They make all practice marches with their companies. They will be grouped by battalion and given at least one hour a day of instruction in signalling, and the musicians of the regiment assembled under the drum major for instruction in the necessary marching and maneuvering and practice with their instruments. They should work about the same number of hours per day as the other men.

Those armed with a revolver must be instructed in its mechanism and care, and firing practice frequently held.

Callisthenic drill

In the proposed schedule given below for the companies an effort is made to provide for the necessary muscular development referred to before. The amount of this drill is not as great as desirable but as the men progress bayonet exercise and pointing and aiming drill answer fairly well to supplement this work. Some will object to any callisthenic drill, under the assumed conditions,

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as a waste of time. They are wrong—it will save time in the end, keep down the sick report and give better results.

Instructors and drill masters

The colonel should carefully inventory his command for instructors and drill masters. In the early stages when divided into small groups many are required; fortunately but little military training is necessary for this preliminary work.

Owing to shortage of good drill masters groups for this preliminary work will have to be larger than is customary in peace time in the regular service, not less than eight men to a group from the start, and these should be combined into groups of two squads each then into platoons, as soon as their work permits. The best instructors should be kept as drill masters after each consolidation.

For the callisthenic drills from the very start the men can be combined into large groups and instructors found who are already competent to drill their squads in the school of the soldier. The other squad commanders who are imperfectly prepared must be assembled at this time for drill and instruction under the best officers and non-commissioned officers in the regiment. They will be carefully taught the next movements to be given

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to the men and how to teach them to their squads.

Instructors and drill masters

As these squad leaders are selected as far as possible from those having had some military training and the others from the brightest and most intelligent men, it is believed possible for them to keep ahead of their squads. It becomes easier as the groups grow larger and fewer instructors are required.

The drill will be given to the officers who do not know it. The officers being formed into a squad by themselves.

All trained officers must be on the drill ground during all these drills by squad, supervise the work, correct mistakes and help out the poorer instructors. The other officers not acting as instructors should be required to attend about half to learn from seeing it done, the other half of this time they should be required to be drilled themselves and to study the drill regulations. There should be no hesitation in having lieutenants drill squads during this period provided they are better at it than some of the enlisted men and are not needed to supervise the work of several squads.

There should be an officers' school every evening except Saturdays and Sundays.

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Officers' school

This should be conducted by the colonel himself. The first subject taken up being the drill regulations. Lessons should be short as well as the sessions of the class and the work thoroughly done. The student officer must learn the text and the instructor fully explain it where necessary. Much explanation will be required in Part II.

The class must keep well ahead of the outdoor work.

Besides the Infantry Drill Regulations, in this school must be taught early in the course, parts of the Guard Manual and Small Arms Firing Manual. The essential parts of the Field Engineering will be taught, and, those not proficient therein, how to read military maps. Lastly take up the Manual of Courts Martial.

The more important parts of Army Regulations should be included in the above course. Better results will be obtained if the lesson each day includes two or three selected paragraphs from this book than by taking it up as a whole and by itself. In its use this is largely a book of reference. In this proposed way the officers become familiar with it and how to use it and the relatively few paragraphs they must positively know are learned.

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If, beside the colonel, the regiment has three or more thoroughly competent officers, the colonel will not require the others to attend officers' school but will order schools for non-commissioned officers with these others as instructors. The classes should not be larger than one composed of all the non-commissioned officers of a battalion and, if instructors are available, those of only two or three companies should form a class.

N. C. O. schools

The work of this class will be largely confined to Infantry Drill Regulations. First the drill then combat and covering detachments must be fully explained and the principles of patrolling taught. If time is available these schools will also take up other subjects taught in our regular indoor course. Care must be taken not to give the men more in one lesson than they can learn.

If there be one, and less than three, competent instructors for these non-commissioned officers, a class will be formed in each battalion and only two sessions held weekly for each, the instructor taking them in turn. Lessons in this case may be longer but the work cannot be so well done.

If there be no one available except the colonel, each captain will be required to have

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N. C. O. schools

a school in his company at the most convenient hour and try to transmit to the men what he has learned in the officers' school.

The following instruction should be given by demonstration or by talks given to the men assembled and sitting.

Talks and demonstrations

Part of it will be given by battalion, part by company, 2 and 4 should be given by squad or platoon, the leaders having first been instructed. In the schedule this instruction is designated by the word "verbal". Its value will depend on the instructor.

List of subjects for instruction by talks and demonstrations:

1. General duties of a soldier. His relation to his officers. System of discipline. Military courtesy. Customs of service as they relate to him. An outline of organization. Encourage the class to ask questions on the subject in hand and kindred subjects and then answer them.

2. The rifle, its mechanism and care and how to clean it.

3. Care of the other equipment, especially that of leather.

4. How to make the pack and adjust it.

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5. Duties of a sentinel on the interior guard. Sentinels' orders.

Talks and demonstrations

6. The most essential parts of the course in personal hygiene and first aid.

7. Importance and necessity of fire control and distribution.

8. Instruction as to artillery with a view to diminish unreasonable fear of its fire.

9. Principles of patrolling.

10. Objects of advance and rear guards and outposts.

11. Duties of a sentinel on outpost and conduct of visiting patrols.

12. If time is available give more instruction under 6.

Most of this is only preliminary to explanations and instruction the men will get in their drills. It is a start, and at the beginning of his training will help to arouse interest and gives some variety at the time when, in the regular drills, but little variety is possible and the drills are least interesting. A good instructor will make this pay.

It is assumed in this schedule that the season is between May and October. Work beginning on a Monday.

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Reveille at 6 A. M. Breakfast immediately after. Necessary police between that and 7 A. M. No drill Saturday afternoon except one hour for instructors; none on Sunday.

PROPOSED SCHEDULE

1st, 2d and 3d Days.

		A. M.	
1st week	6–30	to 7–45	Drill for instructors and officers only.
	7	to 7–30	Callisthenics.
	8	to 8–45	School of the soldier without arms.
	9	to 9–45	Same.
	10	to 10–30	Callisthenics.
	10	to 10–45	Drill for officers and instructors.
	11	to 11–45	Verbal.
		P. M.	
	1	to 1–45	School of the soldier without arms.
	2	to 2–45	Same.
	3	to 3–45	Same.
	4	to 4–30	Callisthenics.
	4	to 5–00	Drill for officers and instructors.
	7		School to last from ½ to ¾ of an hour at first, later the time to be extended.

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4th and 5th Days and Morning of the 6th Day. 1st week

The same as above except that the drill from 9 to 9–45 A. M. and 2 to 2–45 P. M. will be in the manual of arms.

Some camp guards will probably be necessary. This should be done by platoon and this time on guard used to the utmost to teach this duty.

2d Week.—During this week drills will be in the school of the soldier without and with arms, the proportion with arms steadily increasing. 2d week

Commencing Thursday one-half hour each half-day will be pointing and aiming drill.

A. M.		
6–30	to 7–45	Drill for officers and instructors.
7–00	to 7–30	Callisthenics.
8–00	to 9–15	Drill—school of the soldier.
9–30	to 10–15	Verbal.
10–30	to 11–45	Drill.

P. M.		
1–00	to 2–00	Drill for officers and instructors.
1–30	to 2–00	Callisthenics.
2–15	to 3–45	Drill.
4–00	to 4–30	Callisthenics.

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4–00 to 5–00	Drill for officers and instructors.
7–00	School.

3d week

3d Week.—Squads combined in pairs. Drill will be with arms. Part of each drill will be pointing and aiming drill and extended order, close order work being continued. Beginning Thursday an aggregate of half an hour daily will be given to bayonet exercise. The drill must be varied, change made every 15 or 20 minutes.

A. M.	
7–00 to 7–30	Callisthenics.
6–30 to 7–45	Drill for officers.
8–00 to 10–45	Drill.
11–00 to 11–45	Verbal.
P. M.	
1–00 to 3–45	Drill.
4–00 to 5–00	Monday and Wednesday—estimating distance. Tuesday and Thursday—intrenching, using the small tools. Friday — Instruction in guard duty by company.
7–00	School.

4th week

4th Week.—Squads are combined into full platoons. Five or six men are selected from

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each company to form the signal detachment of the company. These men are required to do at least one hour's work a day at this from now on until thoroughly proficient, and excused from a corresponding amount of other work, preferably police and close order in the afternoon. 4th week

A. M.
7 to 11
DRILL

Each drill to be divided approximately as to time as follows:
30 minutes pointing and aiming drill.
20 minutes bayonet exercise.
1 hour close order drill.
Remainder of time extended order drill.

11 to 12

All non-commissioned officers have gallery practice and instruction in use of range finder.

P. M.
1 to 4
DRILL

The best officers of the company for the work take one-half the non-commissioned officers of the company for work in patrolling. The two sections alternate as to days. Remainder of company will be divided into groups. All must have gallery practice at least 5 shots per man

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	P. M.	daily. Only one group at target
4th week	1 to 4	at a time.
	DRILL	Each group to have estimating distance twice during week. Each group to have individual cooking twice.
		Each group to have one hour's instruction during week in first aid and care of feet on a march.
		All to be taught to form for and pitch shelter tent camp.
		If the necessary masks and plastrons are available practice in bayonet fencing at least three times during week for each group. If no fencing rifles are available, poles the length of the rifle and bayonet, with a good pad fastened on the end, answer the purpose. If masks are not available bayonet exercise and close order drill will fill up the rest of the time.
		In arranging this work the best man for it should be put in charge of each class of work.
	4 to —	Company formed with full kit, except rations and ammunition, and marched first day about

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twenty minutes, lengthening the time each day by 10 minutes.

7 P. M. School.

5th Week.

A. M.

7 to 11 Drill same as last week.

11 to 12 Same as last week. 5th week

Gallery practice same as last week.

Patrolling same as last week.

First aid, same as last week.

Estimating distance, once during week.

Bayonet fencing or exercise for at least one hour during the week.

P. M.

1 to 4 Each platoon to be posted as a picket of an imaginary outpost line and men instructed twice during week.

Each squad as above once as a sentry squad.

A wall prepared and men given instruction in scaling it.

Any time left over to be used as thought best.

4 to 5 March with pack as before, giving instruction in advance and rear guard.

7 School.

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6th Week — Company.

6th week company

A. M. 7 to 11 DRILL — One hour close order, remainder extended order drill. Much practice in attack as explained in Chapter IV.

11 to 12 — Same as last week.

P. M. 1 to 4 — Gallery practice as last week, except on Friday.
Friday whole company as support of an outpost, sentinels and patrols carefully instructed.
Each non-commissioned officer, twice during week, to conduct a patrol, instructing privates.
Bayonet fencing and wall scaling as last week.
Estimating distance as last week.
Remainder of time teaching men brush work, hurdle revetment, fascines, etc.

4 to 5 — Same as last week.

7 — School.
Saturday, formal inspection by company.

7th Week — The Company.

7th week company

A. M. 7 to 11 DRILL — As last week except that time given to close order may be reduced to 15 minutes daily.

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7th week company

7 to 11 DRILL — At least two days must be given to maneuver of company against company.

All the men must fire 20 shots during the week at gallery practice at such times as found practicable without interfering with the prescribed program.

P. M. 1 to 5 — Monday. Outpost, company as a support.

Friday. Practice march with instruction in patrolling, advance and rear guard, and attack and defense, either one company to work against another or enemy to be outlined.

Estimating distance drill while out. Men must not march more than 10 miles nor less than 6. Packs will be carried.

Tuesday, Wednesday and Thursday.

1 to 3–30 — Patrolling at least once during week by each non-commissioned officer as leader.

Remainder of time to brush work, filling and piling sand bags, making loopholes and intrenching.

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P. M. Drill in dark as training for night
9 to 10 work.
School as last week.
Saturday, formal inspection by company.

8th Week — Battalion.

8th week battalion

A. M. Drill by Battalion. Not more
7 to 11 than one hour of this time per day should be devoted to close order.
Gallery practice, same as last week.

P. M. Tuesday and Thursday.
1 to 5 March and instruction by battalion similar to that by company last week. Distance marched about 10 miles.
Monday.
1 to 5 Tent pitching and making camp, including the large tents.
Wednesday and Friday.
1 to 3–30 Field engineering.
Work same as last week.
9 to 10 Night drill.
6 Monday, Wednesday, Friday, battalion dress parade. Each battalion once during week. School as usual.
Saturday morning, battalion review and inspection.

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9th Week. Target practice on the range with ball cartridges.

9th week target practice

If the pits are not large enough so that each company can have three targets, only part of the companies should go at a time so as to give that number of targets. It should be completed by end of 9th week and may have had to come earlier for some companies.

If the range is right at the instruction camp it would be much better to have the companies shoot only a couple of hours a day beginning with 7th week and reduce the other instruction by that much, but so that at the end of the 9th week the work accomplished is the same.

10th Week.

A. M.		
7 to 11	Battalion drill all but 15 minutes daily, extended order work. Battalion against battalion at least twice.	10th week
P. M.	Monday, battalion outpost	
1 to 5	instruction.	
	Wednesday, march by battalion with packs. Instruction as before.	

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10th week

Tuesday and Thursday from 1 to 5 and Friday from 1 to 3 instruction by company. Gallery practice, pointing and aiming and estimating distance, each once. Bayonet work for one hour. Wall scaling once. Two patrol problems for each non-commissioned officer. Balance of time field engineering work as before.

Friday 9 to 10 P. M. Night drill by battalion.

Battalions in turn have battalion dress parade on Monday, Tuesday and Thursday.

Saturday morning battalion review and inspection.
School, 7 P. M.

11th Week.

11th week regimental

Regimental work. Colonel uses it to best advantage.

One afternoon practice march. Regimental dress parade 4 evenings. School, 7 P. M. as before.

Saturday, regimental review and inspection.

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12th Week.

12th week practice march

A seven days' practice march under war conditions with as much instruction as possible in field service, care of men, especially the feet, and of course in loading wagons, making and breaking camp.

Marches, especially the first two or three, must not be long.

13th Week.

13th week

Work each forenoon from 7 to 11–30 in what, by careful observation, the colonel finds is most needed.

No work in the afternoon except as follows:

Each man to have gallery practice once, ten shots. Each man to estimate distance once. Companies to have bayonet work for at least two half-hour periods each week and pointing and aiming drill once for some length of time.

Dress parade by regiment three times during week.

Regimental review and inspection Saturday.

School as usual.

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Results of training

This regiment can be used at the end of this three months. It will not be completely nor even well trained but it is believed to be the best that can be done in that time.

Can we have even this much time without great sacrifice and loss? It is very doubtful, and yet it is not believed practicable to use volunteers with less training except in fortifications.

The work has been very strenuous for all; the weaklings will have been eliminated. Any one fit for a soldier in war could have stood the strain, and the others had better be eliminated before taking the field.

If at the end of our 13th week we find we have more time, the work for the week following should be reduced to three hours per day and the schools, after that we may resume the long days of work.

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XI

RECRUITING

THE method of recruiting has a decided influence on effective training. It is much harder to train a company whose recruits dribble in a few at a time than one, all of whose recruits for the year come in at once.

The best results can be obtained if these recruits can all be had in the fall. As stated before, the course of instruction should run from November 1st to October 31st. In the indoor season all that part of the instruction course that can be given, should be. It should be preparatory to the outdoor work. The foundation of sound training should be laid during this season; the recruit can then be given his elementary instruction and be ready to begin the outdoor work with the company. The outdoor season is none too long in which to go through properly the whole course of work that should be taught outside.

When recruits should join

If recruits are received late in the spring or summer they are not prepared to do the work with the company, they get only part

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of it and that in a way that does not give good results. It is like trying to teach Algebra first, then Arithmetic. Another drawback to this method is that it results in the captain's not having all his company for this outdoor work. Our present peace strength is so low that correct training in parts is difficult and when much below this the training is very imperfect.

When recruits should join

Most, if not all, good captains very much prefer to have their recruits directly on enlistment to having them go to a depot for several weeks. The training they receive in these depots, in value, is out of all proportion to the time spent. In their companies, from the very start, while learning the recruit drill they are learning much else of value. The recruit is better off and more contented. In his company there is a personal feeling for him and interest in him not found at the depot.

Recruit depots

The instruction and ways of doing things first learned are those of his company, not always the case at the depot. The few movements taught at the recruit depots must be taught exactly right if precise close order drill is to be had, it is harder to change a recruit's ways of doing anything than to teach

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him the right way from the start. It has been suggested that if the depots are kept up, all drill thereat except callisthenics be prohibited.

Recruit depots

Recruits dribbling in, waste effort. It is as much bother to a company to train and get one recruit into the company as a squad of eight. The large number of men held at these recruit depots would give a very desirable increase in strength to our companies if we could have them. The vaccinations that are attended to at the depots could just as well be done at the posts.

The following is offered as a plan of recruiting that it is believed, would improve that branch of the service and greatly improve the training of our infantry:

Plan of recruiting

All recruiting stations and recruit depots in time of peace to be abolished.

Each regiment in the U. S. to be assigned a permanent district within which its recruits are to be found. The regiment may never be stationed inside this district but its recruits are all to come from there.

Early in November of each year, each regimental commander to select a few recruiting parties composed of an officer and three or four men from his regiment to beat up this district for recruits. They should visit the

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Plan of recruiting

small towns as well as have stations in the larger ones. Before enlistment the recruits to be physically examined by a doctor, either of the Medical Corps or one hired in the district.

These recruits are to be sent directly to their regiments in detachments as enlisted and their training commenced.

As there are many young men who will not enlist for service in the U. S., but do want to go on foreign service, each home regiment will, in addition to getting its own recruits, be given the task of getting a certain number for the Philippines, Hawaii and Panama, the number being allotted by the War Department. Men reënlisting should be sent, as far as practicable, to foreign service. These latter will be sent to designated posts and held long enough to be properly equipped, vaccinated, etc., and then be sent to their regiments.

Large cities like New York and Chicago should not be assigned to a single regiment but three or four regiments to have stations there and part of the outlying districts to be theirs to beat up.

These recruiting parties to remain out until they have completed their quotas then to return to their stations, but never later than February 1st.

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This plan offers several advantages and some disadvantages, but is believed to be an improvement.

Advantages of plan

Its advantages are:

All the recruits of the company come in at one season and that the best one.

They come directly to the company on enlistment.

Companies can be larger without increasing strength of army.

The officer enlisting them belongs to the regiment as does his recruiting party and will exercise more care to get only suitable men.

The recruiting will be more widely distributed and as the men go back to their homes knowledge of the service, and trained men in case of war, will be generally distributed.

Fewer men from the slums of the big cities and more from small towns and rural districts.

The men of a regiment coming from one locality, year after year, a friendly feeling for the regiment should be built up and future recruiting assisted and, in case of a great war, every section will have its nucleus of trained men.

Discipline will be improved and desertion

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Advantages of plan

diminished. The men will realize that their comrades are from their home section and people at home will know of their misdeeds. Besides it is pleasanter for the men to serve with those they have known before.

It cannot be asserted without a trial that this method will be cheaper than the present one but the author believes it will be.

To send out these recruiting parties will be a considerable expense but to offset this there is the cost of the present recruiting stations for rent, the difference in the cost of commutation paid and actual cost at posts, the travelling expenses incurred sending recruits to depots, often in an opposite direction from that to their future posts, the costs of keeping up these depots, a large amount, the loss of the service of all the recruiting personnel for any other valuable purpose during the year as well as the cost for the time lost in training of all the recruits.

The recruiting parties sent out by the regiments are taken from trained men at the season when they can be best spared and probably they would be absent but for a relatively short time.

If this plan be adopted the method will work better each year. The men who have

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gone back, and even those in the ranks, can and will help in the recruiting, and as the number of these increase recruiting will be more easily and quickly done. Each village will know that the party will visit it at a certain season and many will be ready at once. **Advantages of plan**

It will be more expensive the first year or two than afterwards. The saving on deserters should be large after the first two or three years.

There are two apparent objections. That there will be no large number of recruits in hand to be sent to particular regiments in an emergency. This is of small consequence. Where the regiment is wanted for a sudden emergency, the adding of a large number of raw recruits is of no immediate advantage. **Discussion of objections**

Suspending recruiting February 1st may result at first in some regiments not being filled up but this is doubtful. Most of our original enlistments at present are made in winter, and this would be offset, if it does occur, by the other advantages enumerated.

Convenience of administration and keeping records should have no weight as against efficient training for action, the only reason for our army's existence.

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Possible modification

If the infantry cannot have the above system the following modification would improve matters.

Each company to receive recruits but once during the year, each in its turn and regiments as nearly at one time as practicable. The recruits to be sent out within one week of their receipt at the depots except those for foreign service. If the peace strength of the companies be kept at 65, when the company is assigned recruits it should be filled to a strength of 80 it will then average about 65 for the year possibly a few more. It is not believed the total enlisted strength of the army would be increased at all. It would amount to having the men with companies instead of in recruit depots.

The above will enable the captains to do much better training and greater efficiency will result.

Of course those who receive their recruits in October or November would have a great advantage over the others but all could do better work.

Recruits enlisted in summer could be held much longer than others and then, about September 1st, sent to the regiments stationed in the tropics. It is more comfortable for the

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recruits if they can reach those stations in the fall and get their first hard drills and become acclimated while weather conditions are most favorable. This would give the regiments at home their recruits at a favorable season if not the best for all of them.

Either of the above changes can be made by a change in regulations and orders.

Need for a change of system

With our great population and military needs and very small army it is folly not to use what army we have so as to be as well prepared for war as conditions permit.

In the preceding chapter it has been shown how important it is that we have some trained men for every new regiment. We must have trained men to fill the regular army which must bear the brunt of the first attack.

The present law does not provide this. The enlistment law should be radically changed to get the best results for training, general efficiency and preparedness for war.

Enlistment law

All men should enlist for 5 years. At the end of one year's honest and faithful service, except when serving beyond the limits of the U. S., the man should, on his application, be granted a furlough for the remaining four years; if war breaks out, or becomes so imminent as to call for mobilization,

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these furloughs to cease and the men to rejoin.

Enlistment law

The men to have the privilege of remaining on in the service if they so desire and of taking their furloughs at the end of any completed year of service. Discharges not to be given the men until the end of their full five years. Hence these men can not reënlist in another organization while on furlough, and there can be no doubt of their status and liability for punishment as deserters if they fail to rejoin when called.

Men on furlough

For the present, men should not be *required* to take the furlough and reënlistment should not be prohibited, but remaining in service with the colors over two years in time of peace should not be encouraged; later, if found practicable to get sufficient recruits, reënlistment for all, except non-commissioned officers and certain mechanics who first enlist after that date, should be prohibited. Men who have enlisted with the understanding that they can remain in service until retired, provided they behave themselves properly and are physically fit, should be honestly treated; they have an implied contract at the least.

Time on furlough not to count for retirement or increase of pay, and men on such furlough not to be counted in strength of company.

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Men on furlough

Recruits on foreign service should have the privilege of the furlough only after two years service, and men with regiments in the U. S. who wish to remain in the service, after one year's service should be encouraged or required to transfer to foreign service for the next two years.

Men whose service in their first year has not been satisfactory and who are not fairly trained should be required to serve two years before being granted a furlough. The law should also provide that men, whose conduct is found unsatisfactory by a board of officers and the finding is approved by the colonel, may be furloughed at any time after two years service whether the man desires it or not.

It is believed the plan would work if no pay were given men on furlough, but if each be paid ten dollars each six months on reporting his address by mail to the adjutant of the post it would help in finding him when wanted and might be an inducement to some to enlist.

An effort should be made to get young men as recruits. Boys of eighteen or over if physically strong should be encouraged to enlist.

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Men on furlough

Young men are easier to train and for a longer time afterwards are available for service.

We need a reserve but no men should be enlisted directly for it. The reserve for the regular service should be our men on furlough. Men too long out of service and advanced in years are not what is needed for the regular service which must be ready at short notice to face serious war.

Reasons for enlistment plan

The reasons for the foregoing recommendations as they appear to the author are:

1. Five years is as long as the average man is willing to pledge his future for military service unless he means to make it a life occupation. The latter class is not the best for the government. Young men are the best for the ranks in time of war. Men who serve only long enough to be trained for the work are to be desired. It results in a much greater number of trained men being available in time of war and is much cheaper, for it reduces current pay and the retired list.

2. The great importance of having as many trained men as possible and having them dispersed through the country to help in the formation of the new regiments at the outbreak of war is apparent to any one who thinks on this subject.

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3. If recruits be received during the winter months only, the organizations can follow a prescribed course of instruction and complete it annually. If recruits dribble in throughout the year a proper course of instruction cannot be satisfactorily given in that time.

Reasons for enlistment plan

4. At the outbreak of war, it is of vital importance that we have as strong a force as possible of men fully ready trained and equipped. The losses at first in this force will be heavy. If green recruits, enough to fill the regular organizations to war strength and to make good the early losses, be poured in on them they will cease to be trained organizations. A reserve is a necessity. This will provide it at small cost.

5. Many excellent and patriotic young men are willing to serve a short time in the army for the experience and training. Four years, however, is longer than they are willing to postpone settling down to their real life's work. These are the men it is most desirable to get into the army, not as professional soldiers, but as a trained reserve for war. For the first years they are a reserve for the regular companies, then they become available for officers or non-commisioned officers

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of volunteers. This class of young men will enlist much more freely when they can do so and lose only one year from civil pursuits.

Reasons for enlistment plan

6. Enlisting men as young as they are physically fit interferes less with their civil careers, hence will get us more desirable recruits. The physical and mental discipline a boy thus gets will help him in his future work and the younger he gets it, so long as it does not interfere with his schooling, the more it will be worth to him. Taking the recruit young, the five years while his military service is with the regulars are the five best for that purpose. Later when older, more developed mentally and matured in judgment he is best in higher rank than private with the volunteers. If he enters at 18 he is available at 23 for the volunteers or national guard and has at least seven years left in which he can be considered at his best.

7. The provision for letting men out at the end of one year, provided their conduct has been good and they are fairly instructed, will be a great aid to discipline and a preventative of desertion. A good many young men enter the service thoughtlessly and find after a few weeks that the life is different from what they expected. They look ahead to over three

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years more of it and the weak ones desert. They are not vicious nor criminal as a rule but this step injures them seriously; they become prisoners or fugitives, and either will decrease the man's moral stamina and self respect. This provision will greatly reduce this. The man will see that he has only to behave himself for the rest of the year to return to civil life with a clean record. The great expense resulting from desertion will be largely eliminated. The men will be more contented, they will feel they can leave in a short time if they wish, which will tend to decrease the desire to quit. This does not prevent those staying in the service who wish to do so. A few old soldiers are desirable.

Reasons for enlistment plan

Less than one year's training is not sufficient in which to cover properly the course the infantry soldier should have. Two years is necessary to make a good job of it. But we need more men who can be used in war. With some thoroughly trained men in the ranks it is believed better to have 100 others of one year's training than fifty of two or more.

The national guard should have the same period of five years for enlistment with a provision for inactive service, except in war,

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Enlistments for the national guard

after two years of service, unless the man has had service in some other organization, as a college battalion. Less than two years is not enough training to be of value where so little time per year is devoted to it.

While it has nothing to do with training, there is another provision that should be in the enlistment law; that is, that every man who enlists for five years, and is in service when war breaks out, shall be liable for service for at least one year thereafter no matter when his term expires. At the outbreak of a great war is no time to discharge trained men.

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XII

IN CONCLUSION

TIME is wasted at most posts on some things that are of little value compared with the time spent on them. **Relative values**

"Butt's Manual" is fine callisthenic drill and at proper times should be practiced. It would be just as valuable and even more so if, instead of having the men learn to go through it all without command, an instructor gave the movements and the men executed them purely for physical drill. The cadence amounts to little, but executing them so as to exercise properly the desired muscles is important.

Many captains spend a great deal of time practicing this so that their companies can go through the whole series without command and to music. It is pretty, and for the chorus in a musical comedy act might be a success, but for soldiers it is a waste of valuable drill time that could and should be put to better use.

Our inspectors have had something to do with this, and county fairs and similar shows,

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more. The narrow scope of instruction followed in some companies, and the seeking for the easiest way to kill the drill hour by a few, has helped to give this its prominence in our training.

Target practice

Our target practice is open to criticism in some respects. Its importance can not be overestimated and it must not be slighted, but rational methods should be followed. It is necessary to appreciate fully what is required and wanted.

The individual man must be a fairly good marksman for two reasons: so that he can place his shots in a designated locality, and to give him confidence in himself. The better the men can shoot, other things being equal, the more confidence they have in themselves and in each other. For practical results on the battlefield an expert rifleman is of little if any more value than a marksman. Good, fair shooting by every man in the company is what is desired.

On the battlefield much depends on the confirmed habit, this habit-forming can not be done on the target range, but throughout the year's work. Not to exceed two weeks a year should be allowed to any company for known distance practice on the range. If

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its work during the rest of the year has been properly done, this is sufficient. The rest of the time is needed for other work. But the time put on field firing, where done in the solution of correct tactical problems, cannot well be excessive. The more of this the better. **Target practice**

The law granting extra pay to expert shots, sharpshooters and marksmen is not believed good in its effect; it gives undue importance to range firing. An expert rifleman without other training and discipline is of but little value on the battlefield, while even a second class shot, well trained and disciplined, is infinitely his superior as a soldier. This law should be amended so as to divide the men into two classes: the best men in each company to be rated as 1st class. To be so rated the man must be thoroughly well trained in *all* his duties, of excellent character and 1st classman or better in target shooting. The extra pay for 1st classmen to be so alloted as to cost the government no more than is now paid for higher classifications. Men have drawn this extra pay for qualification as shots who were of but little account as soldiers. **Extra pay**

Rifle firing among young men in civil life

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should be encouraged. It is a necessary *part* of a soldier's training and is that much accomplished toward making efficient soldiers of them if the occasion arises.

Rifle firing competitions

Our rifle competitions take too much time and are allowed to interfere too much with regular training. Officers should not be allowed to compete. Their work during this season is with their companies; they should be learning the duties of an officer not that of the private in the ranks. It is undoubted that a man can not make much of a success teaching what he does not know. The officer must know how to shoot well enough to be an instructor, he must know the theory and have the knack of instructing. He does not need to neglect his regular work for weeks at a time several summers to acquire this at competitions.

The best company instructor in rifle firing the author ever saw on a target range was a first sergeant who himself never made better than marksman. The company was very short on sharpshooters and experts but was still shorter on 3d class men. The poorest instructor he ever saw was an officer whose breast on state occasions was covered with big medals for shooting. He had to spare his

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own eyes so as to make phenomenal scores; the instruction of the new men in the company was of little importance compared with the former.

Proper garrisoning

The proper garrisoning of the army, to avoid so much necessary labor and afford better opportunities for training, has been given great attention by the War Department. May it soon meet with success. But much can be done even under present conditions to help in this matter. This beautiful parking perfectly kept is pretty, but it takes ground needed for other purposes and requires an immense amount of "fatigue" labor. This labor could be reduced: the parks would not be so pretty but military efficiency would be greater. For which does the government spend its money?

Strength of the company

Our companies should be increased in size to 100 men in peace, in war to 150. Our companies are now too small for good training; it requires too many new men to raise them to war strength, and the present strength is wasteful of money and effort.

With the companies at a fixed peace strength of 65 it means much of the time still less. There are not enough men to drill in the regular platoon formations. In our extended

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Strength of the company

order work the captain is reduced to the capacity of a platoon commander and platoon commanders are out of a job. These men do not get practice in the handling of their proper units and it can not fail to diminish their interest and enthusiasm and result in poorer work as well as in incomplete work.

In the case of war we shall need our regular organizations very promptly and as efficient as possible. At the same time these organizations are certain to lose many officers taken for other duties. The addition of much more than one man to each two then in ranks, even if they have been previously trained, is a serious blow to efficiency. The new men must either be untrained or men from a reserve. If from a reserve they are rusty on many points and are apt to be strange to the officers who change in a company so frequently. Adding 50 reservists to a company of 100 men will do no harm; adding 85 to a company of 65 will be very different and, if the men added in the second case be untrained recruits, we shall not have a trained unit but a school of instruction.

A great objection to our present strength is the fact that it is so wasteful of money and effort.

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Strength of the company

The object of the army is to have a trained force ready for action and to help train the great mass of men that will be called out in case of war. We want as many trained men as possible, both for the ranks and to help prepare others. Since we cannot have a large army we should do all we are able with what we have.

We have in the regular army an expensive plant; the interest on cost and overhead charges form a large part of the annual cost, the cost for privates is relatively small. There is a demand and need for the output, trained soldiers; yet we produce less than half of what we could for the same cost, except pay of privates. With no increase in interest on plant and pay of officers and senior non-commissioned officers and administration, we could more than double our output of trained men and more than double our efficiency for war, and the training would be much better.

A private corporation doing business this way would probably go into bankruptcy.

New organization in war

One thing should be made a fixed policy and made positive law now so that in case of a real war it will be carried out. All organizations received into the service for the war must be at full strength.

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New organization in war

We shall require in such a war a very large army which means the utilizing of all the organizations we now have and forming many new ones. By filling all existing organizations to war strength we reduce the number of new ones to be formed and utilize their training capacity to the best advantage; they can not be taken at their existing strength and state of training and have much value in battle. We shall need so many men that must be trained that we must use what means of training we have to its utmost.

By reducing the number of new organizations, more and better officers can be used for their training; there will be more chance of getting the necessary instructors for them. A few of the right kind of men can fit for service a full strength regiment as well as one of half strength and better officers and non-commissioned officers can be found for it, for there will be fewer required and the average can be higher.

Besides the difference in cost, administration, road space on the march, and the tactical handling when massed in great numbers, are of great importance and are much better done with fewer organizations.

Upon the army today rests a great re-

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sposibility. With our small numbers and many faults in organization and stations we must be as nearly ready for a great war as possible; not only personally ready but do what we can to make the organization of a great and efficient army, if it ever becomes necessary, a possibility.

The army's responsibility

This means we must study and know our profession thoroughly, give a helping hand to the national guard when and where we can and to any other organization that does something toward the military training of men who may make up this great army if it has to be raised. We must remember that there are many things to be taught a man before he is an efficient soldier; all he learns before he joins a volunteer regiment is that much of a help.

But our chief duty, after personal qualification, is to make the best soldiers possible out of the men under us. This is what we are paid for and this is worth much more to our country than anything else we can do in peace. We should make the best we can of the conditions as they exist at our post, they may not be favorable for getting the best results but that is no reason for our not getting the best possible.

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The army's responsibility

The quitter, the man who does as little as possible, who always wants to be away from troops because things are not as he thinks they should be, or who does nothing because he cannot do it exactly as laid down, is a curse to the army; he should leave the service and sell ribbons.

Rational, systematic training besides producing the greatest military efficiency will keep the men interested in their work and will occupy more of their time; the men will be more contented. Interested and contented men will furnish a smaller sick report and fewer deserters. There will be less dissipation hence less punishment.

Discontent, ennui, a constant grouch, injure digestion and bring on other physical ills. This is another responsibility resting on officers—that for the men under them. With young men we have a great influence on their characters and future careers. We make men better fit for life's work or turn them back worse than we found them.

To the credit of the army it can be said that in most cases an enlistment served therein is a benefit to the majority who so serve. The men are physically and mentally better for a short service and I believe morally.

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There is certainly less excessive drinking among our soldiers in nearly all regiments than in a corresponding number of civilians in the same vicinity, and the same is true as to other vices. In personal cleanliness, decency and politeness they are far ahead of the average man of the same social standing as that from which they come. Many employers have recognized this, and are giving preference to discharged soldiers in employment. The uniform makes the man conspicuous and one drunken soldier in a thousand will call for more attention than ten drunken civilians out of five hundred.

The army's responsibility

The duty of trying to improve the men morally is a military as well as a moral duty. It is in line with what has been said before: the better the man, the more valuable the soldier, the more he can be taught, the more he can help to train others, and the more likely is he to remain in physical condition to be fit for service in the field.

"We have a profession not a trade." Let us take it seriously, appreciate our responsibility, make the best of conditions as we find them, improving them where we can, and train ourselves and those under us to be THE BEST INFANTRY.

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Notes on Elementary Field Training

PART I

BY

"GRENADIER" pseud.

SUBJECT 1—The Attack
2—The Defence and Trench Making
3- Outposts

Geo. S. Hinley
Lt. Col. 4th Inf'y.
Brownsville, Tex.
April 7th 1916.

LONDON
HUGH REES, LTD., 5 REGENT STREET, S.W.
1915

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NOTES ON ELEMENTARY FIELD TRAINING—Part II

By "GRENADIER"

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5—Notes on Advanced, Rear and Flank Guards.
6—Economy of Ammunition.
7—Wood Fighting.
8—The Use of Cover.

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PREFACE.

THE Author of these simple aids to Field Training originally compiled them for use in the rapid training of Soldiers made necessary by the War.

Having recently returned from the Front, he has been able to incorporate the results of experience there.

January, 1915.

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INTRODUCTION.

SUBJECT 1.—THE ATTACK.

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THE OBJECT OF THESE NOTES.

It is hoped that, with these directions in his hand, any platoon commander who is able to give words of command with assurance will be able to impart some instruction to young soldiers; and that, while doing so, he will learn both the subject that he is teaching and also the habit of command.

The subjects of these notes have been divided into phases, each of which should be taught separately. There is no reason for teaching the phases in the order in which they are given.

It is believed that the best way to use these notes is as follows:—The unit for instructional purposes is the platoon; the *Platoon Commander* will—

(1) Explain what phase is going to be attempted and what the objects of this phase are.

He will try to interest the men in the reasons for everything they do.

(2) He will cause demonstrations to be given to the platoon as suggested in the phases.

(3) He will then, in most of the phases, hand the sections over to their commanders.

The *Section Commanders* will then exercise their sections in the phase which has just been explained. The *Platoon Commander* will supervise them while they do so.

The phases should first be dealt with separately, then in groups, and finally all the phases of one subject attempted together.

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THE ATTACK—IN PHASES.

(Phases 2, 8, 10, 11 can be practised in barrack rooms in wet weather.)

PHASE 1.—Advancing in Extended Order.

Faults to be avoided :—

(1) Men bunching together.

(2) Loss of direction.

(3) Men failing to at once see signals.

To impress on the men the importance of these points, detach 10 men from a platoon to give the following demonstrations, which the remainder will watch :—

To illustrate :—

Point No. 1.—The 10 men, in extended order, will advance towards the remainder. Four men in the middle will be made to bunch to one pace, the remaining men maintaining the full extension. They will be halted, and the platoon will be asked at which part of the line they would fire. They will then be told :—

"Men who bunch attract fire to themselves."

Point No. 2.—The 10 men, now divided into three squads, will advance as before, the outer squads leading to their fronts, the centre one leading quarter right. After a few paces' advance, they will be halted, and the platoon shown that :—

"Loss of direction means bunching in some places and gaps in others."

Point No. 3.—The 10 men will again advance in extended order, alternate men being told to carefully watch for signals while the others are *not* to do so. After a few yards have been covered, the signal "halt" will be shown from behind the line of advance. Some men will halt at once, others will continue forwards five or six paces. The platoon will then be shown that :—

"Failure to watch for signals causes confusion and prevents those who did observe the signal from using their rifles" (as they have other men in front of them).

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Section Commanders will then exercise their sections in advancing and retiring in extended order, crossing paths, etc., which run diagonally to the line of advance (lines of benches can be substituted). This tends to cause loss of direction.

Platoon and Section Commanders chiefly watching for faults 1, 2 and 3.

PHASE 2.—Rushes.

The platoon watches four or five men who make demonstration rushes.

Points to which attention must be directed :—

(1) The man who gets up slowly is an easy target.

(2) The man who gets up last is usually the last to get down and, therefore, draws most of the fire of the enemy.

(3) The man who shifts about in order to be the better able to spring up, thereby gives notice to the enemy that he will soon be a target.

To illustrate these points some of the men giving demonstration rushes should be caused to make the above mistakes and the results be explained.

Section Commanders will then practise their men in rushing. This can be done under cover in wet weather.

Races can be held between sections from "down" to "down again."

PHASE 3.—Moving to a Flank in File when Extended—Crossing a Gap in File.

Points to be especially noted :—

(1) Men must be shown that moving to a flank in file must never be attempted except under cover.
Demonstrate this by making men extended to three paces cross the front in file. Point out what easy targets they form.

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(2) Men must be taught how to cross a gap when moving in this formation. Make a wall with movable screens from the miniature range, leaving a gap in it.

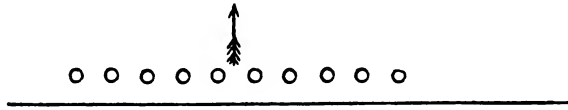
Men move along the wall, the leading man halting short of the gap. Those in rear close up, placing themselves *on his flank*, not remaining behind him. When all are up the word is given by the Section Commander, and the section bolts across the gap.

To make clear the object of this, let six men follow each other singly across the gap, and then return in a rush as described, while the remainder of the platoon watch.

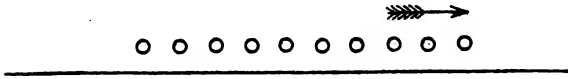
Point out how when men cross singly they present a far more lasting and favourable target.

PHASE 4.—Moving in File and thence Wheeling to the Front in order to Pass Through Woods or Dead Ground.

(1)



(2) "Move to the right as in file" (by signal).



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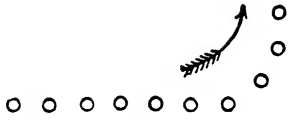
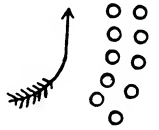
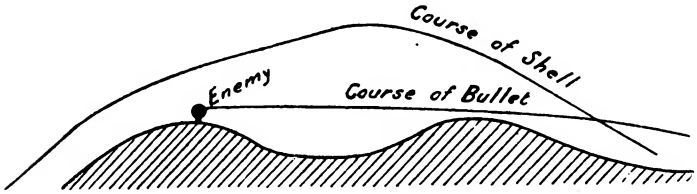
(3) "Left wheel" (by signal).



(4) Without further orders men close up on their leader in file.



Explain how in dead ground and woods it is not rifle bullets (with flat trajectory) but shrapnel bullets (with steep angle of descent) which you fear.



Explain that to avoid shells it is best to get into small compact bodies, as shells are fired at an *area* of ground, and not *aimed* at parties of men.

(1) Explain that always, especially in woods and marshes, in file or single file :—

(i.) Men move more quickly.

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(ii.) Keep direction better.

(iii.) Are more under control of leaders.

(iv.) Can move by ditches, etc.

(2) Explain that when halted, men now kneel, as by lying down they must *spread out*.

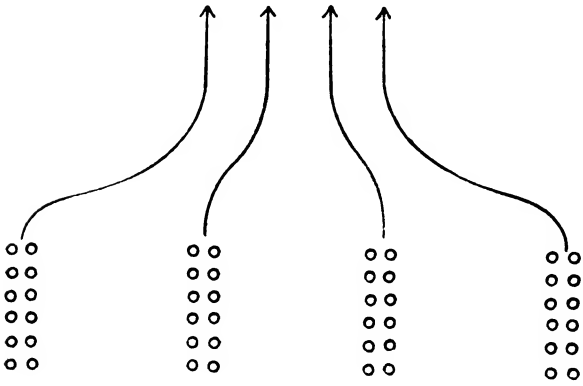
Let sections practise, bearing in mind points 1 and 2.

PHASE 5.—A Platoon Passing Through a Wood During an Attack.

(1) The first line in each Company goes through the wood *extended* to clear wood of surprises.

(2) The other lines, as soon as they get under cover of wood, move to a flank in file and wheel forward by sections as in Phase 4.

(3) As they enter the wood the sections will feel in to each other sufficiently to be able to see each other in the wood (and no closer).



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Thus the platoon (1) passes quickly through the wood; (2) keeps under the hand of Platoon Commander; (3) sections can help each other if attacked; (4) platoon does not lose direction as the Platoon Commander (who alone probably has a compass) can march on a bearing and lead *all* his sections thereon.

(4) Before reaching the farther edge of the wood sections must regain their original intervals.

(5) Before breaking cover from the wood the sections would extend, which they should practise by sections.

PHASE 6.—Breaking Cover.

No man must show himself at edge of cover and thus give notice to enemy of presence of troops.

To explain and demonstrate this, erect the drill-shed screens into a wall with gaps in it. Let the platoon watch five or six men break cover from behind them, showing the men that by appearing unexpectedly they can win much ground before the enemy can direct fire on them. Whereas, if they show themselves before breaking cover, they will be greeted when they advance with fire from the expectant enemy.

This should be practised by sections with section command in front, watching and criticising from point of view of the enemy.

PHASE 7.—Reinforcing.

(1) On signal to reinforce being given, the word "*get ready for rapid*" will be passed along the line by WHOEVER sees the signal. *Observers* will look backwards.

N.B.—There should be one observer per platoon and, perhaps, per section.

(2) Directly reinforcements appear the OBSERVERS and anyone else who sees reinforcements will shout "two rounds rapid."

(3) Directly reinforcements throw themselves down in the line:

(i.) *They* will distribute ammunition.

(ii.) And in return be told the range.

Whenever reinforcements arrive there must be this "swop."

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PHASE 8.—Retelling Off.

(1) As soon as, by being reinforced, a line becomes mixed, it must be retold off into "squads" (avoid the word section as it signifies one of the original commands in the Company).

(2) To do this the senior N.C.O. or soldier in each section of the original line or of the reinforcements will look round him and, if no one of the three or four men on his either side is senior to him, he will form some 10 or 12 men into his "squad" by calling out the names of those who are the flank men of it. He will call it by his name—as "Corporal Brown's Squad."

(3) This is done all through the line.

(4) It is by no means an exact way of dividing a line.

(5) Sections will sometimes overlap, and often some men will not be told off at all. It is the duty of such men to attach themselves to the nearest formed squad.

(6) It is *far more important that such telling off should be rapid than that it should be accurate.*

(7) As soon as a squad is told off it can advance, it should not wait until the whole line is told off.

(8) By mixing up sections and retelling off, this most important operation can be practised even in wet weather in barrack rooms.

PHASE 9.—Mutual Fire to Cover Rushes.

This should be practised by the four sections of a platoon together, though it can be practised in a platoon.

When it is no longer possible in an attack to advance without some of the attacking line keeping up fire, the following procedure will be followed (that of a platoon is shown for example) :—

(1) Rushes will start from one flank (say the right).

(2) Right section prepares to rush, and passes this information along the line or sends some easily understood signal.

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(3) The section next to that which is going to advance will not be able to fire without danger to those rushing, so the men of it lie flat with heads down.

(4) The remaining sections prepare to fire, and the instant the rush is commenced give two rounds of rapid fire to keep down the heads of the enemy.

(5) The rushes should start from both flanks, and perhaps from the centre as well, of the Company, sections following one after the other.

(6) The following most essential points men must be taught by repeating if necessary :—

"*The closer you are to the enemy the shorter must be the rush, but the more the men rushing at a time.*"

PHASE 10.—Passing Messages.

(1) Men must be taught to pass messages in short, concise sentences.

(2) The name of the sender must be given at beginning or the end of each message. No more noise than necessary should be made.

(3) If the name of the sender is *not* given, the message must never be passed.

(During the recent fighting outside Ypres, a Battalion of the Brigade of Guards was caused to retire by a false and anonymous message being passed along the line.)

(4) This most important duty can be taught in the barrack room—along a line of men lying or standing.

PHASE 11.—Fixing Bayonets.

(1) If an attack starts from within 600 yards of the enemy, bayonets should be fixed before it commences.

(2) If bayonets are not fixed before the attack develops, it should be done at a range of 300 to 400 yards.

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(3) Front rank men should fix while rear rank men fire, then the positions are reversed.

(4) Men should be taught to fix bayonets when prone without unnecessary movement of the body, which might draw fire.

PHASE 12.—The Charge.

(1) Men should be formed up almost shoulder to shoulder.

(2) They should deliver two rounds of rapid fire as a preliminary.

(3) The charge should be slow and steady (no faster than the pace of the slowest man).

(4) The men should keep as good a line as is possible.

(5) Men should be shown, by demonstration, that a slow and steady advance looks far more alarming and irresistible than a disorganised, scrambling mob.

(6) Troops should seldom charge a greater distance than 50 yards.

PHASE 13.—The Pursuit.

After men have been taught to charge they can be taught the pursuit.

To do this they should charge pole-targets, or men in distinctive dress representing enemy. These will then retire. The men charging will throw themselves down and fire rapid at the enemy.

The men will be taught the objections to pursuit with the bayonet, so dear to the unthinking soldier. They are :—

(1) The enemy are fresh, whereas the attackers are tired; so that pursuit with the bayonet is usually ineffective. "You can't catch them."

(2) The enemy's artillery will shell the taken position, while the artillery supporting the attack will follow the flying foe with fire. So that the only safe place for troops who have taken trenches is in them.

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Troops will be re-formed, and ammunition equalised and distributed.

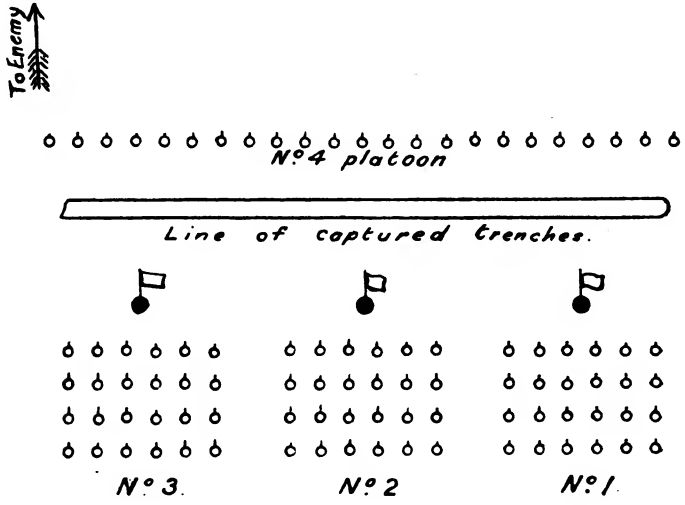
If the enemy disappear, scouts keep touch with them.

PHASE 14.—Re-forming after the Capture of Position.

If artillery fire does not prevent it, the platoon which came into battle last pushes on to re-form in extended order prepared for instant resistance to attack.

The remaining platoons re-form behind the taken position, if there should be cover available there.

This should be done by the senior officer, N.C.O., or soldier in each platoon facing the front and holding up his arm or rifle. The men will rally on him facing the same way, in single rank in column of sections. They will kneel or lie down as cover demands.



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The following adages should be taught to the men; they should have the reasons for these explained to them.

(1) *Whenever troops break cover, they should run at top speed until stopped by fire.*

The Reasons for this :—

If the troops have not shown themselves before breaking cover, they should be able to gain some ground before being detected.

It should take the enemy several seconds to direct fire on to them when detected. Thus ground is gained without firing a shot. The greatest fear of attackers is exhaustion of ammunition.

Therefore, to gain ground in this way without firing is of great value.

(2) *Once troops have commenced to attack, the faster they advance the safer they are.*

The Reasons for this :—

The more quickly they cover the ground to the enemy's position, the shorter the time during which they are exposed to fire. The faster the advance, the greater the difficulty of the hostile artillery in keeping the range of the attackers. If their advance is rapid, the enemy loses confidence and, consequently, his accuracy of aim.

(3) *The object of an attack is to reach a position from which the enemy's rifle and machine gun fire can be beaten down.* (This range is sometimes as short as 50 yards.)

The Reason for this :—

Unless the attackers have immensely larger numbers, they cannot charge infantry who continue to fire accurately and rapidly. This the Germans continue to disregard.

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(4) *Until this position is reached,* NOT A SHOT SHOULD BE FIRED EXCEPT :—

(i.) To aid movement of own troops.

(ii.) To repel some exceptionally dangerous target (a counter attack, etc.).

The Reasons for this :—

Exhaustion of ammunition is the greatest fear of the attackers. It is *only* by fire at the closest range that fire superiority will be won. Therefore, not a shot more than is absolutely necessary should be fired until this range is reached.

(5) *At longer ranges rushes should be longer, one section rushing at a time.* (Rushes of 30 yards at a range of 800 yards.)

The Reasons for this :—

It takes the enemy some time to "pick up" and fire at men at the longer ranges.

They are apt to "brown" parties of men and not to aim at individuals. Therefore, the number of men rushing at a time should not be large.

(6) *The closer the range the shorter the rush, but the more the men engaged in it.* (At 300 yards' range, a rush of two sections for 15 yards.)

The Reason for this :—

At closer ranges the enemy can snap quickly, therefore the exposure of men must be for a very short time. At closer ranges the enemy will aim at individual men, therefore the more men up at once the more confusing for the enemy. The more the men who rush together, the greater their confidence.

(7) *Never give covering fire unless the rush it aids could not be made without it.*

The Reason :—

To prevent exhaustion of ammunition.

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A DRILL ATTACK BY A COMPANY TO TEACH PLATOON COMMANDERS THEIR DUTY.

To make a drill attack with a Company the following suggestions may be followed :—

A pole-target enemy is used.

Form up Company in column of platoons in a fold of the ground. (There are such at S.W. corner of Kensington Gardens facing N., at N.W. corner of Green Park facing E.)

Leading platoon, in formation as in Phase 1, breaks cover as in Phase 6, and advances some 200 yards.

Platoon commander is told he is held up by fire.

He signals for reinforcements as in Phase 7.

The second platoon, which has had a look-out watching for this signal, breaks cover as in Phase 6, and advances (Phase 2), reinforces first platoon, as in Phase 7.

The line retells off, as in Phase 8.

The line advances 100 yards or so, as in Phase 9.

The line is told it cannot advance further till reinforced.

The signal is given and the third line reinforces.

The line retells off and advances as in Phase 9.

It is told it cannot advance further and signals for reinforcements.

The fourth platoon reinforces ; line retells off.

The line advances till within 50 yards of enemy.

The line charges. Phase 12.

The pole-targets representing enemy are retired by the men controlling them.

The line pursues with fire. Phase 13.

The enemy disappears.

The scouts are sent out.

The line reforms. Phase 14.

Before a drill attack by a Company is made, platoons must be trained in and able to perform all the phases separately and collectively.

No great amount of time should be spent in Company attacks, as the instruction in them is not so valuable to young officers and soldiers as that in platoon work.

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SUPPLEMENT TO NOTES ON FIELD TRAINING.

The points which we want to achieve as regards the training for active service in the short time at our disposal are as follows :—

(1) Instruction of young officers in the art of leadership, map reading, siting and construction of trenches, giving of fire orders, a thorough knowledge of the care of arms and ammunition, outposts, writing operation orders for a battalion and messages.

(2) The men must be inculcated with a strict sense of discipline, a thorough knowledge of musketry; be kept physically fit, practised in entrenching and obstacles, and march and fire discipline.

The best way of achieving these objects is that, as regards Para. 1 :—

All officers must regularly attend all parades until passed by the Adjutant as having, not only a thorough knowledge of drill, but also of the art of correcting mistakes and the power of command. There is no doubt that the art of leadership is originally obtained on the barrack square, and without thorough grounding here it is impossible to obtain it in the field. It is a common complaint at the front that many regrettable incidents would have been avoided if the younger officers had had more powers of leadership.

All officers should pass the standard tests in musketry, and should be able to clean a dirty, rusty rifle themselves.

Writing operation orders is most essential, as any young officer may suddenly find himself an Adjutant, or even commanding a Battalion.

Young officers should be made to understand that they are directly responsible for the efficient state of their platoons to their Captain. The fact of men not knowing the name of their platoon commander shows that the latter has failed to impress his personality on his command, and has shown himself lacking in leadership. Officers should be taught to lecture their platoons, and be impressed that the best way of learning is to teach. They should read up the subject they are going to lecture on, make notes, and give it without the aid of a book.

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With reference to Para. 2 :—

When Companies are at disposal of their Captains, the following points must be paid special attention to :—

(1) Musketry. Men should be practised at the standard tests, especially rapid loading and firing, landscape targets both on and off the miniature range. No day should pass, if possible, without some sort of musketry instruction. Backward men should be practised frequently, and special squads of these told off under the best instructors.

(2) Bayonet exercise and competitions between platoons.

(3) Running, jumping (this can be done by getting forms out and jumping materials from the gymnasium), skirmishing.

(4) Lectures by young officers under supervision of Captains.

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Subject 2.—THE DEFENCE AND TRENCH MAKING. IN PHASES.

For the Instruction of Platoon Commanders, Section Commanders and Men.

Larger units than the Platoon are not considered.

In dealing with involved subjects, such as Artillery Fire, simplicity of explanation rather than technical accuracy has been aimed at.

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THE DEFENCE—IN PHASES.

THE suggested method of teaching this subject is a short lecture, followed by a short demonstration on the barrack square. Then after a rest of half an hour another short lecture, followed by an application of both lectures in the field.

THE FIRST LECTURE.

The defence from the point of view of the infantry soldier in the present war consists :—

Firstly, in the making of trenches.

Secondly, in the occupation of trenches.

These two subjects will be dealt with separately.

THE PURPOSE OF TRENCHES.

The purpose of trenches is to protect men in them from fire, and thus to enable them to fight against more than their number of the enemy.

Trenches serve the same purpose as armour used to against men without armour.

In making armour, its shape and thickness depended upon the sort of blows it would have to withstand—such as swords and arrows. In the making of trenches, in the same way, the sorts of fire which they will have to guard against is the thing that decides what their shape will be.

The sorts of fire which they are subjected to are :—Firstly, rifles and machine guns, which, as they use the same bullets, can be regarded as the same. Secondly, artillery fire. In order to make trenches suitable for protecting men from these two sorts of weapons, we must consider what the effect of their fire is in each case.

THE CHARACTERISTICS OF RIFLE FIRE.

The nature of the fire which a trench guards against :—

Rifle bullets in this war are always fired at trenches from very short range—normally at about 300 yards. They skim in a flat level course over the ground. They may be regarded at this short range as travelling in as direct a line as the rays of a searchlight. Therefore, as long as a man has any bullet-proof cover which hides him from the front he is safe.

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Characteristics of Artillery Fire.

Artillery shells are, however, fired from a distance of, say, two miles; and, therefore, in order to carry such a distance they are fired upwards into the air, just as a cricketer throws a cricket ball up if he wishes it to reach a long distance. As a result of this, artillery shells as they approach a trench are falling as well as moving forward. So that their blows slant somewhat like the rays of the sun. If the sun is high in the sky, a man, to get shelter behind a wall from its heat, must crouch down and sit very close to it.

Some of these shells are made to burst in the air; others burst when they hit the ground. In either case they come down at a steep slant.

To give protection against a shell, the trench must be deep and have a steep side under which a man can crouch.

There is, however, another danger—a shell may fall into the trench though it safely passes over the head of the man in it. It will then burst and probably kill the men in that length of trench. Thus it is necessary to prevent shells from falling into the mouth of the trench.

To do this, the trench must be short and narrow so as to make the mouth of it as small as possible.

A rule can thus be stated :—

"THE SHORTER AND NARROWER A TRENCH IS MADE THE SAFER IT IS."

Again, the lower a man can crouch in a trench the safer he will be from pieces of a shell which bursts close to the trench. This enables us to state another rule :—

"THE DEEPER A TRENCH THE SAFER IT IS."

It is also obvious that a trench which is not easily visible is less likely to be shelled than one which is conspicuous. From this a third rule can be formulated :—

"THE BETTER HIDDEN A TRENCH THE SAFER IT IS."

(Men should be made to repeat these three rules.)

The lecture should now be broken off and the men should be asked questions by their platoon commanders on it, especially the part relating to the three rules of trench making.

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After about five minutes of this the lecture should be resumed, thus :—

There are three kinds of trenches, each for an entirely different purpose. They are :—

Firstly.—FIRE TRENCHES in which men fight.

Secondly.—SHELTER TRENCHES in which the supports rest, protected from fire, and also from weather.

Thirdly.—COMMUNICATING TRENCHES, which act as safe paths from the SHELTER TRENCHES to the FIRE TRENCHES.

ONLY in FIRE TRENCHES do men fight. SHELTER TRENCHES are for REST. COMMUNICATING TRENCHES are paths.

Fire trenches and the method of digging them will now be described, and this will end the first lecture.

The four most important points about the making of fire trenches are :—

(1) Choosing a suitable position to build the trench. This is called siting the trench. (An architect sites a house when he chooses the most favourable part of a field in which to build it.) (This is chiefly an officer's and N.C.O.'s affair.)

(2) What shape the trench should be—this is called the design.

(3) How men are to be instructed to dig the desired trench, and how they should be told off for this purpose.

(4) How best the trench can be hidden from view.

These four points will now be dealt with separately.

The first and most important consideration in making a trench is a favourable field of fire. This means that when lying down a man can see to shoot anyone who approaches from the front.

The second consideration is to find a piece of ground which lends itself to the hiding of the trench when made.

A favourable field of fire should extend about 300 yards to the front. Before this war 800 yards would have been considered ideal.

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The reasons for this change of opinion are these:—If on Monday morning you had a field of fire of 800 yards, the Germans would crawl up close to you on Monday night and entrench themselves, so that by Tuesday morning you would only have a field of fire of 300 yards.

There is another most important reason:—The German artillery fire from concealed positions, and their fire (as they cannot see you) is directed by telephone by an officer near their infantry firing line.

If your field of fire is 800 yards, their officer at that range can see your trenches and direct fire upon them. But if your field of fire is 300 yards he will, to do this, have to approach so close to you that he cannot safely carry out his duty, so that you will suffer less from artillery fire.

Also, if your field of fire is only 300 yards, the Germans to attack you must bring their infantry within this range.

It will be very difficult for the German gunners to fire at your trenches for fear of shots, which go short, hitting their own men. So choose a field of fire from 150 to 350 yards.

By night this can be done by sending out an N.C.O. the required distance. He will then show a flash lamp from below the level of his jacket towards the trench, and shield it from view in other directions as he would a match from the wind.

DESIGN OF FIRE TRENCH.

The next matter to consider is the design of the trench.

This differs even in different Companies in a Battalion.

The one now given is merely a suggestion.

(If possible a model previously prepared in sand or clay should be shown to men.)

The fire unit in battle is the section.

Because no man can hope to control more than one section in the defence.

The trench now described is therefore made to hold one section of men, and also the supports when they reinforce.

The trenches for a Company would simply consist of 16 of these section trenches with gaps in between them.

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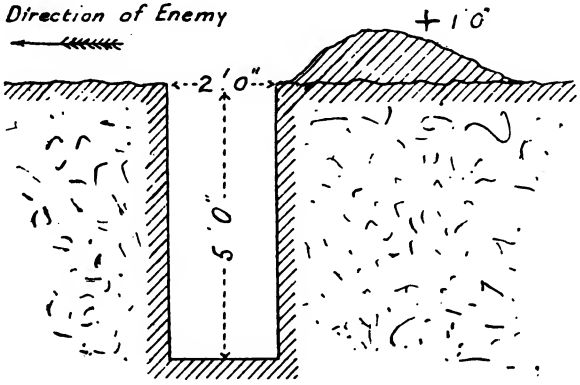
The trench is in three equal lengths or pieces. Each is about 17 feet long (it depends on number of men in the section), 2 feet wide, 5 feet deep.

Its section would be this :—



Draw the above diagram on a blackboard.

When possible, the trench is then dug some inches deeper with holes, called " sink pits," at each end, and the floor is then filled with brushwood or other material to the original depth of 5 feet. This is to give a dry floor in wet weather.

Most of the earth is thrown to the rear and makes a scattered bank which acts as a background for the heads of men when firing.

Some of the earth is thrown out to each end ; banks are thus formed at each end of the trench. These stretch 3 or 4 feet forward towards the enemy. They are called " traverses."

Their object is to protect men in the trench from enfilade fire.

If the vegetation, etc., will give the necessary concealment, they should be about 2 feet high and 4 feet wide (across the front). But it is better to do without them than that they should give away the position of the trench by being conspicuous. When used they should extend about 4 feet to the front of the forward edge of the trench. An aid to memory for the men is—a fire trench should be " shoulders wide " and " shoulder deep."

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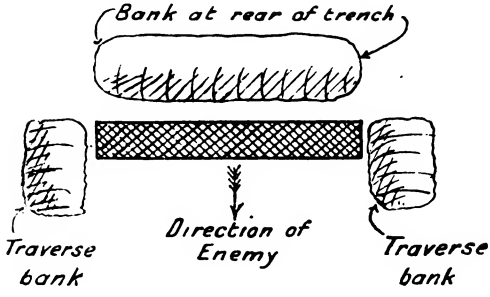
The trench looked at in Plan, that is from above, is of this shape. Draw this diagram :—



There are three lengths of trench to each section of men, the centre one being drawn back about 6 feet to the rear of the other two.

There is a lateral interval of about 6 feet between each length of trench.

Draw the diagram on the blackboard.

The trenches for a section seen from above appear thus :—

The greatest faults of these trenches will be found to be :—

1st.—The walls will fall in in wet weather or when shelled.

2nd.—They are very visible.

The way in which these faults are overcome will be dealt with in the next lecture.

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It is clear that it will take a very long time to start the making of these trenches for a Company if the O.C. Company has to go round and tell each man where to dig.

It must also be remembered that in war trenches are often dug on unknown ground, on a wet and dark night, within short range of the enemy.

Unless some very simple system of placing the men in their digging positions is devised, the confusion at night will be appalling and the waste of time disastrous.

A simple and positive drill is therefore now given for the starting of the type of trench suggested. It has been used with success in the field. It can be adapted to suit the type of trench used in a Company, but it is necessary to practise it fairly frequently as a drill movement.

It should be remembered that drill is almost the only way of controlling tired men in difficult circumstances, and has a steadying effect on the nerves.

The drill is as follows (it will in future be called "Phase 1 of the Defence) :—

(1) The section is fallen in in single rank facing the front in the centre of the position to be entrenched.

(2) (Word of command) "NUMBER."

(3) Tell off into three squads. (Word of command.)
1 to 5 right squad.
6 to 9 centre squad.
10 to 15 left squad.

(4) To arm's length—outwards extend." (Word of command.)

This represents men with the inner arms touching the shoulder of the next man as in open interval drill.

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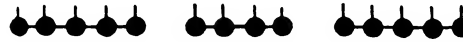
(5) "Outer squads two paces outwards—march." (Word of command.)



(6) "Centre squad two paces step back—march." (Word of command.)

(7) "On the line of your toes dig."

PHASE 2.

The method of placing a whole Company in its digging position is :—

(1) O.C. Company is allotted his frontages.

(2) He takes the four platoon commanders, each accompanied by one man, round the front and allots to each his frontage.

(3) Each platoon commander leaves his man as the right marker of his position, and goes back to his platoon, which he brings up and halts behind his position.

(4) He then takes his four section commanders, each accompanied by one man whom they use as their right markers, around the platoon frontage, allotting to each section its front.

(5) The section commanders bring up their sections and halt them between their right marker and that of the section on their left. They then perform the drill as in "Phase 1."

After a break of some short time, the second lecture will be delivered as follows :—

Two subjects were left over from the last lecture to be dealt with—

1st.—How to prevent walls of trenches falling in.

2nd.—How to conceal trenches.

The first of these two subjects will now be dealt with.

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REVETTING.

To prevent walls of trench falling in they are revetted.

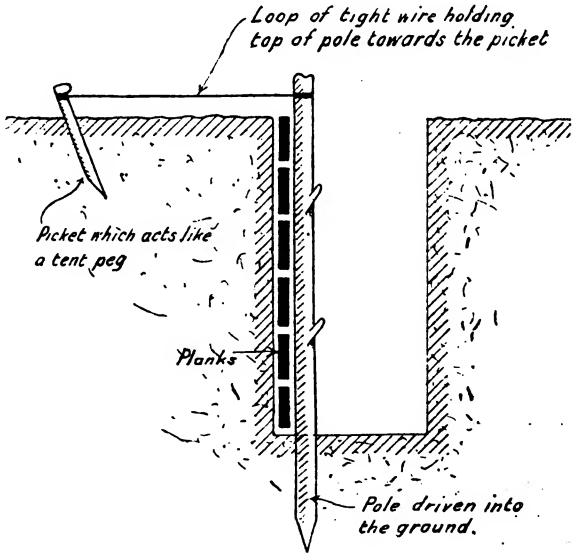
The text-books say "Revetting is the art of making earth stand at a steeper slope than is natural to it."

If you pile loose sand against a wall, the wall is acting as a revetment to the sand.

Revetments can be made with many different materials :— With planks, brushwood, sandbags, boxes, sods, etc.

The best type of revetment for the walls of a trench is to line the walls with planks lengthwise along the trench. These are held against the walls of the trench by upright poles whose lower ends are driven into the floor of the trench. To prevent the weight of earth, pressing on the planks, from bending the tops of the poles inwards, the heads of these poles are held back against the walls by wire.

Section showing PLANK-REVETMENT (shown only on one side of the trench) :—



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This diagram should be drawn on to a blackboard or explained by a model.

The wire which holds the head of the pole towards the picket is passed twice round each so as to form a loop.

In order to tighten this loop of wire, a short stick is inserted between the two "parts" of the wire and twisted until the wire is "taut." To prevent the stick untwisting, the end is wedged into the ground so that it cannot revolve and so slacken the wire.

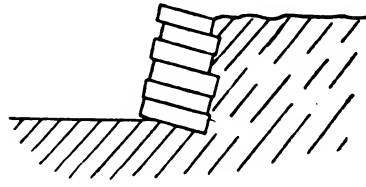
Iron roofing, brushwood hurdles, doors, etc., can be used instead of planks.

Another method of revetting is by building a wall against the earth which it is desired to prevent from falling in.

This wall can be built of bricks, sandbags, or sods of earth (about 12 inches by 9 inches square and 4 inches thick is the best size).

In any case the wall should be built in the following manner. The foundation for the first brick or sod is carefully made, sloping slightly inwards towards the wall.

If sods are used they must be placed with the two grass sides facing each other.



Showing how sods, bricks, etc., must slope inwards.

Both sides of a trench should be revetted.

The sides of a traverse which are nearest a trench must be revetted also.

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After the lecture, revetting banks of sand can be practised by a few men to demonstrate how this is done.

PHASE 3.—Concealment of a Trench.

This can be effected by :—

(1) Choosing a site which lends itself by its vegetation or by a fold of the ground to easy concealment.

(2) By never having long lengths of trench.

(3) By never having trenches in a line, but by advancing and retiring some of them a few yards.

(4) By avoiding steep slopes on the enemy's side of banks and traverses, as steep surfaces show different lights and shadows to surrounding ground.

(5) By covering all newly turned earth with sods (taken from a distance, as, if taken from near by, the resultant scar on the ground will reveal the position to aeroplanes).

(6) By planting bushes, etc., irregularly a short distance in front of trenches. By these the enemy are prevented from seeing the trench, though men in it can see them. The principle involved is the same as in the wire blinds in front of a tailor's window.

(7) By making conspicuous dummy trenches.

Fire trenches—their construction and masking—having been considered, the shelter trenches can now be described.

Shelter Trenches are usually made in a concealed position, as they are not made for fighting and need no field of fire.

They are usually a little wider and shallower than are fire trenches.

They have a bank on the side towards the enemy, and a roof to shelter them from fire and bad weather, though it will not keep out unburst shells.

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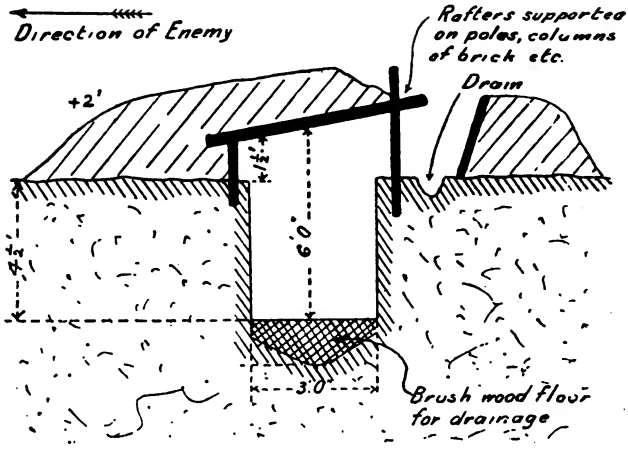
SECTION OF A SHELTER TRENCH.



The roof covers the whole trench and extends beyond it to the rear. The roof is made of sheet iron, wood, or brushwood, etc., covered with earth 9 inches to 12 inches thick, and is supported on rafters running from front to rear, at intervals of about 5 feet or 6 feet.

The rafters are supported by the bank in front and at the rear by wooden supports, piles of brick, boxes, etc.

On the ground below the rear edge of the roof is a drain to catch drippings and keep the trench dry.

To the rear of this is a bank which shelters the trench from the blow back of shells and from the wind and rain.

Air and light enters by the space between the roof and this bank, and this space is wide enough for an officer or N.C.O. to pass along to see that the trenches are empty when the "stand to arms" is given. Otherwise men might sleep on, and it would be difficult in the hurry to detect their absence.

The plan of these trenches—that is, their shape seen from above—may be the same as that of the fire trenches; the drill

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for making them also the same, but there should be no gaps between sections.

The shelter trenches for a Company may be in one line; or if behind some narrow piece of cover (such as a farm), in column of platoons, when they are also more compact.

The trenches are wide enough for men to sit in with comfort, and for two men to sleep abreast.

They should have steps leading to the rear for each length of trench.

PHASE 4.

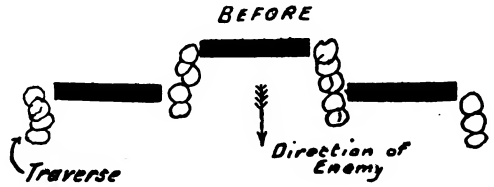
Troops occupying shelter trenches should be made to "stand to arms" soon after they have occupied them, in order to practise the men to turn out quickly.

"Standing to arms" means that the men put on their kit, get out of the trench, and each section falls in, ready to move off, behind its own trench.

Communicating trenches can now be described.

They are the concealed approaches to the fire trenches, and through them messengers, ammunition, and food and support are sent forwards.

The first communicating trenches to be made are narrow ones of fish-hoop plan, which join up the short lengths of trench in each section thus:—



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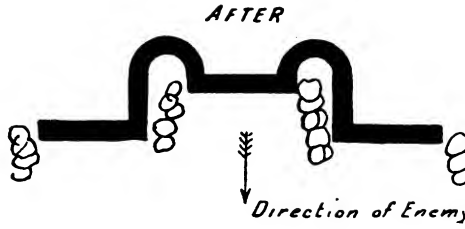
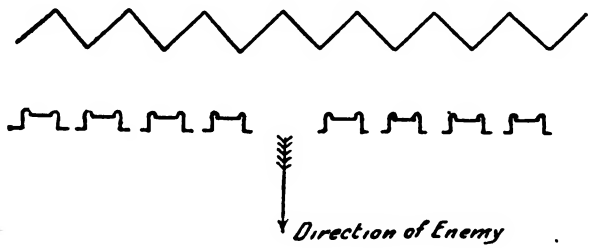


These "link" trenches can be dug under rifle fire by men standing in the trenches without exposing themselves—as can all communicating trenches, though it is a slow job.

After these are made, a long, zigzag trench is made parallel with the fire trenches and some 30 feet in rear of them, thus (two platoons are shown) :—



After this is made, short link trenches are made, from this trench in rear, leading up to the section trenches. They, however, stop short about 4 feet before reaching them. This prevents shells, bursting in them, from killing the men in the fire trench, and also prevents the fire trenches becoming enlarged by the corners being brushed away by men coming and going. The bank thus left between the first trench and the link trench

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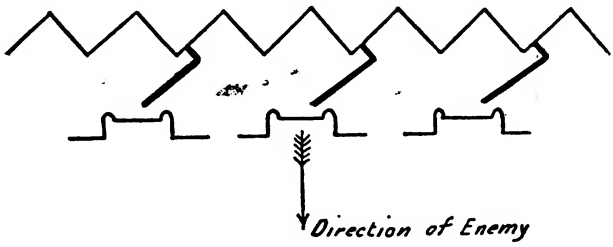
can have the top 12 inches removed. Thus a man walks as far as this bank and crawls unseen over it into the fire trench.



After link trenches have been made.

From this zigzag trench, which runs behind the fire trench, a single zigzag trench runs to the rear and either leads direct to the shelter trenches or else to the nearest covered approach to them.

In building communicating trenches, which are about 5 feet deep, the earth is always thrown up to form a bank on the side towards the enemy.

The trenches are zigzagged to prevent being swept by enfilade fire and to localise the effect of shells bursting in them.

Entanglements.

When possible, wire entanglements are made from 10 to 15 yards in front of the fire trenches, and more especially in front of the gaps between the lengths of trench.

They consist of posts driven into the ground, stayed with guys and "tent pegs," and the whole entangled with barbed wire.

Latrines are dug in the angles in the zigzag communicating trenches.

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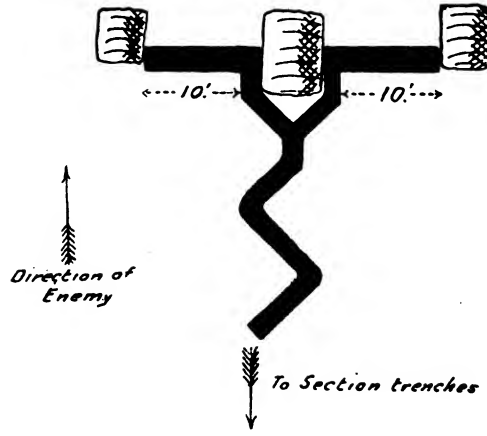
SIEGE OPERATIONS.

The battles of the Aisne and Ypres developed after a few days into siege operations. The opposing forces were only some score of yards distant from each other. Each army then commenced to "sap" or burrow towards the other. A type of "sap," which is highly spoken of, will now be described.

When sapping operations are contemplated, it is not essential to have a communication trench in rear of and parallel with the firing line as shown on page 39. Instead, the section trenches can be coupled up end to end by curved loops of trench, and thus formed into a communication trench itself.

The saps, which are now driven out to the front, form a new line of fire trenches, while the old section trenches act as both: as a communicating trench and also as a second line of defence.

The sap trenches are driven out towards the enemy in short zigzags from the outer ends of each section trench. When they reach as far forward as is desired, they are forked, and the forks turned outwards so as to form a **T**. There is a traverse at the end of the arms of the **T**, and another in the fork between them. The trench is 2 feet wide and 5 feet deep throughout.



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The men should now be shown models of trenches, if such can be made in sand, or by chalk marks on blankets.

They should be asked by their platoon and section commanders what types of trenches are represented.

The platoons should now perform the phases of the defences as follows:—

1st.—Revetting the sides of a sand heap with boards and posts, and with bricks.

PHASE 5.—Taking over a Trench.

(One section can perform this while the rest of the platoon watch.)

The men are told that they are in a *shelter* trench; they are formed up, and are given their food, water, and ammunition (imaginary) for the ensuing day. They are marched in single file along an imaginary zigzag communicating trench to a fire trench, the front wall of which may be represented by a line of benches with blankets over them, or similar device. They at once make range cards (the instruction for making which is given in another pamphlet), and mark trees, etc., to the front, or put out range marks at known distances, if the enemy permit them to do so. If not, they estimate the ranges.

They all lie down hidden in the trench, except one observer who keeps hidden but looks out every 30 seconds or so.

The men leave their rifles with bayonets fixed on the front bank of the trench, pointing towards the enemy.

In each platoon one pair of snipers is told off; they fire in turns if a target appears, the other one observing. They should have field glasses.

The section commander is in the centre trench, which is drawn back two yards. From this trench, by looking round the traverses at its end, he can see the men in his other lengths of trench.

By having trenches closer to the enemy than his own, he gains in coolness, which is most necessary to him as fire controller.

The trenches on his right and left fronts also act like blinkers to a horse, and prevent him, in an attack, from being influenced

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by the state of affairs which exists in other parts of the battle, and which is not his immediate concern.

Another section will then be formed up, marched to the imaginary fire trench (made of benches), and will relieve the section in it.

On being relieved, the section dismounting will hand over all ammunition, except 50 rounds, and their range card, which they WILL EXPLAIN.

This relieving of trenches takes place under cover of darkness in war.

PHASE 6.

Pole-targets carried by men can now appear to represent an enemy.

The observer will inform the section commander, and fire in short bursts will be given. The number of rounds to be fired (never more than five) will be stated every time.

When the enemy get so close that fire control is impossible, fire will be very rapid and uncontrolled.

In war, opening of fire is, if possible, ordered by O.C. Company or O.C. platoon.

The pole-target enemy will now approach to within five yards of the trench, but men in it will continue to fire and will not get ready for a bayonet fight.

PHASE 7.—PURSUIT BY FIRE.

The pole-target enemy will now run away. The men in the trench *will not chase them*, but will fire rapid at them.

PHASE 8.—REINFORCING A FIRE TRENCH.

Place one section in the trench: bring up another to reinforce it.

The reinforcements will distribute ammunition and be told the range.

There is enough room in the fire trenches described in Lecture 1 for supports as well as the firing line.

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PHASE 9.—Counter-Attacks.

For this phase three platoons at least must be used. Place two of them in imaginary trenches, with a gap of 25 yards between them.

Attack the line with pole-targets.

The remaining platoon, which is in rear under cover (real or imaginary), is ordered to counter-attack.

It is formed into column of sections.

Men are extended to two paces and charge in this formation, with a distance of 20 yards between each successive line.

They charge at the enemy through the gap between the trenches of the other two platoons.

They do not chase the enemy, but when he retires, lie down and fire at him.

The platoon in the trenches do not join in this, *but remain in their trenches.*

Troops in trenches never counter-attack.

Counter-attacks are made by supports or fresh troops.

The sections can then practise again Phases 1, 2, 3 (if ground suits), 5, 6, 7, 8 and 9, and revetting.

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Subject 3.—OUTPOSTS—IN PHASES.

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OUTPOSTS—IN PHASES.

Their Purpose.

In war it is necessary that troops should always be protected against surprise. When a force is halted this is done by a screen of troops, who are called outposts. Their objects are:—

(1) To enable the main body to rest without fear of surprise and to prevent enemy scouting.

(2) If attacked, to hold on long enough to enable the main body to get into battle dispositions.

Composition of Outposts.

This outpost screen is divided into sections, each occupied by a Company of infantry. These are numbered from the right—as No. 2 Outpost Company—written No. 2 O.P. Company. The flanks of each outpost Company are very clearly defined, so that there can be no portion of the front between two Companies left unprotected.

The two outpost duties, of *resisting* attack, and of guarding against surprise and against attempts by enemy to reconnoitre, are performed in the following manner:—

Each O.P. Company has one or more picquets, whose duty is to fight. This they do on a line called the line of resistance, which is usually roughly decided by the O.C. outposts, the exact position of the trenches being decided by O.C. picquets.

The word picquet should suggest FIGHTING to the mind.

The duty of guarding against surprise and scouting by the enemy is performed by sentry groups and patrols.

The words group, sentry and patrol should suggest VIGILANCE, BUT NOT FIGHTING, to the mind.

Picquets, like other fighting bodies, have supports which reinforce them if they are severely attacked. To secure themselves against surprise, picquets have sentries and patrols (who act as scouts) in front of them. Sentries of outposts, like other sentries, have reliefs, but these remain close by their sentries to avoid unnecessary movement, which might disclose the position.

As by night, two sentries are used at each sentry post, six men are required for each post, to supply sentries and reliefs.

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Each post is commanded by an N.C.O. or old soldier, and is called a sentry group or simply a group.

PHASE 1.—Method of Posting Outpost.

The rough line of resistance and his sector of the front having been told him, the O.C. of the outpost Company sends out a screen of scouts to cover the posting of the outposts.

He tells the scouts where to go, and at what time they should return (about one hour should suffice).

O.C. Company marches it to some sheltered place behind the line of resistance and halts it there. He inspects his portion of the front, and decides if one picquet or more are needed. He is guided in this by the following rule :—

Each line of approach for the enemy which enters his section of the line must be guarded by a picquet.

Let us imagine that he decides to use two picquets. He points out to two platoon commanders, whom he details as picquet commanders, roughly where these two picquets should be stationed. They are numbered one and two in that particular O.P. Company ; O.C. Company then chooses a position for the support (in this case two platoons) at some place equi-distant from each picquet.

PHASE 2.

The actual position of the picquet is chosen by its commander. By day it must be able to command by fire the approach into the position. By night it must be able to command it with the bayonet. So, it often happens, that a picquet has different day and night positions. The day position should have a longer field of fire than is necessary for a normal defensive position, as the outposts' object is to delay the enemy, and not to give him a protracted battle on its position. Outposts are not usually shelled.

PHASE 3.

O.C. each picquet is responsible for guarding his picquet against surprise.

He therefore goes to the front of his position and decides how few sentries suffice to do this. With him he takes two or three N.C.O.'s whom he intends to place in charge of such sentry groups as he may require.

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Let us imagine that he decides to use two groups.

He returns to his platoon, marches it up to the position he intends to hold, while the group commanders each march six men to the positions that their sentries are to occupy. The O.C. picquet now decides that, as part of the ground to the front cannot be watched by the sentries, he will send out one reconnoitring patrol.

One N.C.O. and three men are sent out on this duty. The picquet is now reduced to about 30 rank and file.

It is, we will imagine, No. 2 picquet of No. 3 O.P. Company.

Its groups are No. 1 and 2 of that picquet.

The picquet now digs trenches for its day position (it usually has only its entrenching tools), and prepares obstacles 10 or 15 yards in front of its night positions. To guard a road at night troops should be actually across it, and the road should be blocked. If the making of obstacles in daylight would cause the discovery of the O.P. position, this must be done in the twilight. While all this is being done one man will act as "sentry over arms," and will, if he sees a messenger approaching, warn O.C. picquet before the messenger actually arrives.

N.B.—It is customary for the picquet to dig trenches large enough to hold the support as well, some men from the support being sent to help.

PHASE 4.

These operations being completed, O.C. picquet lets his men rest either in their trenches or a short distance behind them, as he may decide.

Men may not stray from the picquet, nor may more than one fall out at a time. Men of the picquet must always have their kits on, and rifles loaded, and by their sides.

When the picquet is resting, every one in it must lie in his appointed place, according to the nature of his duty—the reliefs for patrols will lie in one place, the reliefs for the sentry over arms in another. The sentry over arms must know the position of every one and of the commander of the picquet.

It may sometimes be deemed advisable to have a visiting patrol to see that sentries are awake as do "rounds" in peace time.

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This practice often causes unnecessary movement, and thus betrays the presence of an otherwise well-concealed outpost.

It is, therefore, not under normal circumstances desirable.

Training Note to Platoon Commanders.

Each platoon should regard itself as a picquet, and now perform Phases 2, 3, 4. Scouts, groups and patrol sent out need only move off a few paces so that they may share the instruction of the remainder.

PHASE 5.

One group should now move off to its position (followed for instructional purposes by the remainder of the platoon).

The group is halted a short distance behind the position chosen for the sentry. The sentry is taken forward and placed by the group commander in some place from which he can see, but where, if possible, he and the group, who will lie almost at his feet, are concealed. He will at all times stand—his rifle by day at the order, but *without fixed bayonet.*

He will be told by the group commander :—

(1) What front to watch.
(2) Names of important places to his front.
(3) Position of groups on each side (if known).
(4) If any reconnoitring patrols are out.

The group lie, with rifles loaded, within actual touch of the sentry. If they can do so without disclosing their position, they should make some cover for themselves from fire. The group is told its number.

Training Note.

The group will now, for instructional purposes, practise what it would do under the following circumstances.

PHASE 6.—Two Hostile Scouts Approach.

(Send out two men to play this part.)

The sentry, as soon as he sees them, draws the attention of the group commander without making himself visible.

The group are awakened but remain still.

If the scouts approach the group still nearer, the group will

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cover them with their rifles, but will not fire. If these approach within a few yards they will be challenged in a low voice, and if they attempt to escape they will be SHOT.

If, however, the scouts appear as though they would pass between the sentry groups without discovering these, they will be allowed to do so, but three men should be sent off to stalk and capture them, if possible, without firing.

Not a single shot must ever be fired by outposts unless absolutely necessary.

TRAINING NOTE.

Practise both these procedures.

PHASE 7.—AN ARMED FORCE APPROACHES THE SENTRY.

(Send out six men to represent some 20 men or more.)

As soon as he sees this force, the sentry will draw the attention of the group commander to it. The group commander will at once send verbal notice of it to the O.C. picquet, such a message as this:—"50 of enemy approaching No. 2 group; at present 600 yards distant from it. From Corporal Bland."

When the enemy reach 200 yards from the group it will open fire on them, and if they push on it will retire on the picquet without masking its fire. Before doing so it should allow time for its messenger to arrive.

PHASE 8.

After practising Phase 7, take the opportunity to practise the men of the platoon in delivering verbal messages. Messengers must always repeat messages before leaving. Write down for each section commander a message. The section commander will then march his section off a short distance, and will send man after man with this message to the platoon commander, taking care that no man hears the message till his turn comes to take it.

If any man fails to deliver the sense of the message with assurance (as many will fail), he must be sent back to the section commander again, and will take his turn again at carrying this

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same message. Messengers as they pass should let troops know the message if it concerns them, but must not stop.

This important exercise is a suitable subject for training in wet weather in barracks.

PHASE 9.—Inhabitants, Deserters from the Enemy, or a Flag of Truce Approach the Sentry.

(Use two men to act as any of these.)

The sentry wakes the group commander as soon as the party is seen. The group is awakened. The sentry allows the enemy to approach within five or six yards, and then, in a low, distinct voice, says HALT, and covers them with his rifle.

There must be no mistake as to the enemy's conduct. "Halt" is the same in the languages of all the nations concerned.

If they do not AT ONCE halt, or if they do halt but behave suspiciously, the sentry will AT ONCE SHOOT.

(Practise this, making the enemy disregard the challenge.)

If the enemy halts, the sentry will, in the same low voice, say "Hands up!"

If they act in a suspicious way they will be immediately *shot.*

If they, however, seem not to understand, one man of the group will make signs to show the meaning of "Hands up."

If they disregard these they will be *shot.*

(Practise each of these procedures.)

If the enemy put up their hands, the sentry will still cover them, but one man of the group, also covering them, will advance in such a way as not to mask the fire of the sentry. He will ask them their business. If they are deserters he will bring them, disarmed, into the group, and notice will be sent to the O.C. picquet.

If they bear a flag of truce, one of the party will be brought in, blindfolded; the remainder will be sent away.

If they hang about they will be shot. If the party are inhabitants, they will be told to go to the nearest examining post, if there is one, or sent away.

ALL THIS TIME THE GROUP *lie down* READY FOR AN ATTACK.

It is a time-honoured trick to engage a group in conversation, and then rush it with concealed troops.

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PHASE 10.

SENTRIES ARE RELIEVED every two hours, and with as little noise and movement as possible. (Practise this.)

PHASE 11.—RELIEVING SENTRIES BY NIGHT.

At some time before dusk, at an hour after a sentry has been posted, another additional sentry will be posted for two hours. There will thus, by night, be two sentries, one doing his first hour of duty, the other his second. One will be discontinued at dawn. The one doing his second hour will keep his rifle at the slope.

(Practise men in the instructional group in this.)

PHASE 12.—RECONNOITRING PATROLS.

The duty of such a patrol is to observe, but never to fight. By day they will stalk about to the front. By night they will stand still, and listen for the enemy. Their tour of duty is two hours. They will return by a different route to the one by which they went out; otherwise hostile scouts will "lie up" for them. They will, before they leave, inform the group nearest to which their return path will lie, that they should be expected at some given hour. The patrol's strength is usually four men, one of whom commands.

They move in a diamond formation, with the commander in the rear.

If they obtain important information, they will send back a man with a verbal message to O.C. picquet. (The time wasted in writing makes the information stale and usually too late.)

If the message is of utmost urgency, two messengers will take it by separate routes.

These messengers should *not* return to the patrol.

(Practise this phase while the platoon look on.)

After practising these phases, let each platoon be considered a picquet (with an imaginary support), and let each put out groups, etc., and carry on through the phases, again continuously.

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NOTES ON OUTPOSTS.

(1) Reliefs for outposts arrive one hour before dawn.

(2) At dawn, which is a likely hour for attack, there is thus a double strength of outpost.

(3) As soon as it is clear that no attack is forthcoming, the old outpost march off.

(4) If the force, which outposts cover, is advancing, it will pass through them. They then re-form and march at the rear of the *main body*.

(5) If the main force is retiring, the position of the outposts will be taken over by the rear guard. The outposts will fall in and march at the head of the main body.

(6) The less firing there is in outpost lines, the better their duty is accomplished.

(7) By night outposts have fixed bayonets, unless the moon is very bright.

(8) No fires are allowed, except by permission of O.C. outposts.

No smoking by night is allowed.

No smoking by day, except by supports and picquets at discretion of O.C. outpost Companies.

(9) At night it is usually sufficient to guard roads and paths.

(10) If there is a bridge or other defile within easy distance of the O.P. line and by which enemy must approach, it is usual to place a patrol there, which is called a standing patrol.

(11) The use of detached posts, whose object may be found in the text-books, should be firmly avoided.

(12) Outpost duty is exacting, and should be performed by as few men as possible.

(13) It is far better to hold on too long, if attacked, than not to give the main body sufficient time to get ready.

(14) The conscientious performance of outpost duties is necessary in order to avoid disasters.

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Notes on Elementary Field Training

PART II

BY

"GRENADIER"

INCLUDING

SUBJECT 4—The Uses of the Entrenching Tool.

5—Notes on Advanced, Rear and Flank Guards.

6—Economy of Ammunition.

7—Wood Fighting.

8—The Use of Cover.

LONDON
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PREFACE TO PART II

THE Author of these simple aids to Field Training originally compiled them for use in the rapid training of Soldiers made necessary by the War.

Having recently returned from the Front, he has been able to incorporate the results of experience there.

March, 1915.

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Subject 4.—THE ENTRENCHING TOOL AND ITS USES.

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THE OBJECT OF THESE NOTES.

It is hoped that, with these directions in his hand, any platoon commander who is able to give words of command with assurance will be able to impart some instruction to young soldiers; and that, while doing so, he will learn both the subject that he is teaching and also the habit of command.

The subjects of these notes have been divided into phases, each of which should be taught separately. There is no reason for teaching the phases in the order in which they are given.

It is believed that the best way to use these notes is as follows:—The unit for instructional purposes is the platoon; the *Platoon Commander* will—

(1) Explain what phase is going to be attempted and what the objects of this phase are.
He will try to interest the men in the reasons for everything they do.

(2) He will cause demonstrations to be given to the platoon as suggested in the phases.

(3) He will then, in most of the phases, hand the sections over to their commanders.

The *Section Commanders* will then exercise their sections in the phase which has just been explained. The *Platoon Commander* will supervise them while they do so.

The phases should first be dealt with separately, then in groups, and finally all the phases of one subject attempted together.

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THE ENTRENCHING TOOL.

The entrenching tool, though so small, is immensely useful. A man's safety may often depend on his ability to dig himself in with this tool.

Unless a man is taught how best to use this tool, it will be of little good to him.

There are four chief uses for the entrenching tool—

1st.—To start trenches of any type until the proper tools are brought up, and to supplement these when they do arrive.

2nd.—To improve existing cover, when no other tools are obtainable.

3rd.—To make rifle pits on ground where there is no natural cover and where full-sized tools cannot be procured.

4th.—To scratch up cover for a man who is lying down under occasional rifle fire, and who has to dig while lying prone.

Each of these uses can now be considered as a separate phase.

PHASE 1.

No special instructions need be given for using the tool in making ordinary trenches.

For digging on the surface the tool is excellent, but it has no "throw," and is therefore of little use when a depth of more than 18 inches has been reached.

It is useful for clearing vegetation, etc., from the field of fire and for loop-holing walls. If used as a lever it usually breaks.

PHASE 2.

Its second use is that of improving existing cover.

Banks may often be turned into satisfactory entrenchments without the use of any other tool.

If they are in exposed positions their regularity of line and visibility makes them an easy target for hostile artillery.

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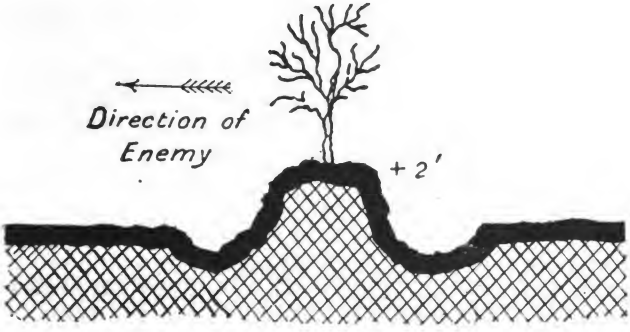
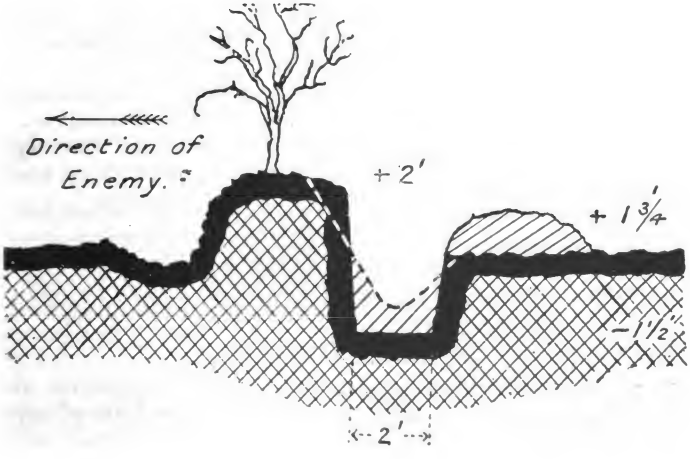
If, however, they are situated where they are not visible from a distance they can be made into excellent cover.

BANK BEFORE IMPROVEMENT.



AFTER PREPARATION WITH ENTRENCHING TOOL.



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The best methods of adapting a bank and ditch for defence with an entrenching tool are—

(1) To arrange cover behind which a man can kneel and crouch when firing.

(2) To disturb, as little as possible, the side of the bank or hedge which faces the enemy. If attention is paid to this, it is difficult for the enemy to discover if the position is held or not.

(3) To increase the thickness of the bank (at every point) to a full rifle's length, to make it bullet-proof.

(4) A man kneeling or crouching can fire over a height of about 3½ feet.

(5) With any surplus earth make a bank behind the trench a few inches lower than that in front.

(6) Men in such a place as this should be spaced at an interval of about one arm's length.

(7) A section may conveniently be drawn up as directed in the section drill ("Notes on Elementary Field Training") except that the centre squad would not step back but would remain in line. There would then be in each section three squads of men with gaps between the squads.

(8) In the spaces between each group of men, into which the section is divided, make a traverse or bank of the same height as the bank in front. The traverse should extend from the bank in front right across the trench.

(9) There should be a traverse to every five or six men, who would thus be in a compartment to themselves.

(10) Under normal conditions a bank could be altered as suggested in less than one hour with entrenching tools.

N.B.—The following is a convenient and easily remembered standard—

Earth that is a rifle's length in thickness is bullet-proof.
Every man should know this.

PHASE 3.—Rifle-pits.

When there is no existing cover which can be improved, and when the position held is liable to be shelled, some form of cover must be provided.

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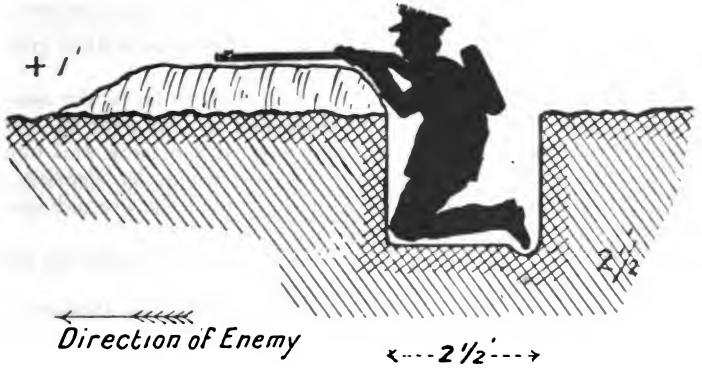
When only entrenching tools are available cover is most quickly obtained by digging rifle-pits as described below.

The cover obtainable is not, however, very satisfactory as the entrenching tool is essentially a surface-digging implement, whereas depth is necessary to get good cover from shell fire.

In such cases each man should dig for himself a small pit about 2½ feet from front to rear, about 1½ feet wide, and 2½ feet deep—the deeper the better.

The earth excavated should be thrown to the front to make a bank about 1 foot high and at least a rifle length in thickness from front to rear.

FIRING.



UNDER SHELL FIRE.

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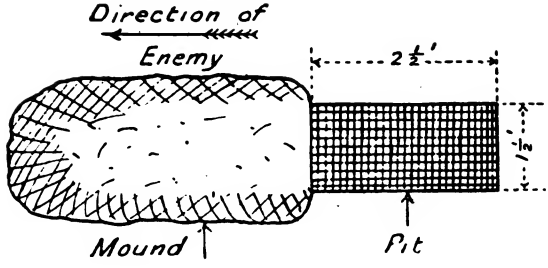
PLAN OF RIFLE-PIT.



As will be seen from the second sketch, there is neither great safety nor much comfort in these rifle-pits.

It is, however, far safer to be in them than to lie in the open.

If time allows they should be deepened to just over 3½ feet, when a man can shoot round the corner of the bank and over the ground level, or to just over 4½ feet, when, by clearing a loophole in the parapet, a man can shoot over the ground level standing up.

It is, however, extremely laborious to dig deeper than 2½ feet with an entrenching tool.

Surplus earth should, if the pit is deepened, be thrown to the sides so as to form traverse banks.

PHASE 4.—Scraping up Cover when Lying Down.

One important subject in the training of men, and one which is frequently forgotten, is to teach them to scratch cover for themselves when lying down.

This can be taught under cover and in wet weather. All that is needed are three loads of sand or loose earth in a shed. It should be heaped in a corner to the thickness of about 15 inches. In this, three men at a time can scratch cover for themselves.

It is usually best to place in charge of this place an N.C.O., to whom the theory of the subject is explained. Parties of

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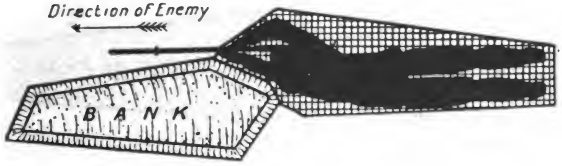
three men can be sent to him, so as to arrive at intervals of about 10 minutes. They can easily be fallen out from parade on the barrack square for this period, after which they can rejoin.

Often in an attack men may lie for hours in the open under a desultory rifle and machine-gun fire. They can, if so trained, in half-an-hour, while lying down, obtain perfect cover for themselves from rifle fire. SUCH COVER GIVES NO PROTECTION FROM SHELL FIRE.

The section and the plan of the lying cover is now given.

The man fires over the ground level and round the right side of the bank which he has made.



To make this cover, the man lies down straight to this front (not turning half right as he is taught on the range). He chooses a fold in the ground which gives as much natural cover as possible. He makes a mark where his elbows, feet and left wrist will rest when he is in the firing position. All the ground bounded by these points he digs out, throwing the earth to his left front opposite his left shoulder.

In order to dig this cover while lying down, he should start picking at the earth where his chest will rest, then turning the

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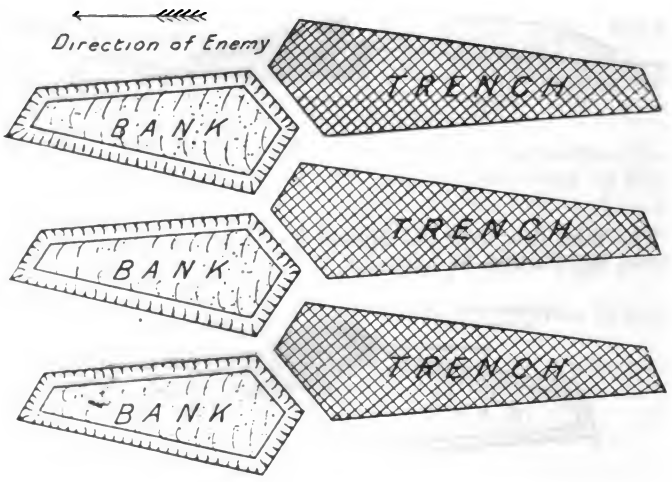
entrenching tool round till its handle is pointing to the front, he will shove the loosened earth forward.

He will work himself backwards, scooping away the earth as has been suggested. When a certain amount of earth has been collected into a bank, he will be able to lie on his side and so facilitate the work.

The men when making such cover as this should, when possible, lie in groups of five or six together, so that, as shown in the sketch below, each man is protected on his left by his own bank and on his right by that of his neighbour.



The depth at the front of the trench should not be less than 9 inches, and at the rear should be about 1½ feet, with a little groove for the toes.

It has been found, on the field-firing ranges, that very few hits are made even at very short range by rifle fire on "head and shoulder targets" behind this type of cover.

It, however, gives no protection against shell fire.

In wood fighting, where observed shell fire by the enemy is impossible, this type of cover is most useful as it is so quickly

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made, and as roots make deeper trenches difficult to dig in a short time.

Men can, with a little practice, construct this type of cover in 20 minutes if they can kneel when working.

While making this cover a man should keep his rifle on his right side, where it will be clear of earth, etc.

Trained men can, while lying down, dig this type of trench in about half-an-hour.

WHENEVER IT IS POSSIBLE TO DIG THEM, RIFLE-PITS ARE PREFERABLE.

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SUBJECT 5.—ADVANCED, REAR AND FLANK GUARDS.

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ADVANCED, REAR AND FLANK GUARDS.

THE duties of an Infantry Company are alone considered.

Advanced, Rear and Flank Guards are to a force, on the move, much what outposts are to it when halted.

ADVANCED GUARDS.

If a force is retiring, or if it is advancing but out of reach of the enemy, the duties of an advanced guard are principally those of policing and improving the route to be followed.

When, however, a force is advancing, and there is a possibility of meeting the enemy, the work of the advanced guard becomes extremely difficult.

Its commander and all his subordinates must display a mixture of dash and discretion, which it is not easy to attain.

DASH is needed, because the first duty of an advanced guard is to enable the main body to march undisturbed and unchecked.

Small parties of the enemy must, therefore, without hesitation be brushed aside.

This can only be effected by extremely rapid attacks delivered without any delay.

DISCRETION is, however, necessary.

Without it, a too impetuous advanced guard may become involved in an action with a superior force.

If the O.C. main body does not then support his advanced guard he will lose it.

If he does attempt to rescue it, he will have to fight an unpremeditated battle on ground chosen by his enemy.

Chief Duties of an advanced guard :—

1. It is responsible for the local reconnaissance of the country through which it passes.
2. It must prevent the march of the main body from being checked.
3. It must not involve itself too heavily in an action.

Although reconnaissance is one of its duties, it is essentially a fighting force.

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The fighting portion of the advanced guard is called the MAIN GUARD.

It is preceded by a smaller body called a VANGUARD, whose chief duty is to drive away hostile scouts and patrols.

In front of the VANGUARD marches a still smaller force, named the POINT, whose object it is to discover ambushes and to prevent the enemy scouts from observing on the march.

To recapitulate :—

The MAIN GUARD is for FIGHTING.
The VANGUARD for driving away scouts and patrols.
The POINT is for reconnaissance.

TRAINING NOTE.

The nature and objects of an advanced guard should be carefully explained to the men from the text-books.

Or, if this is not convenient, the platoon commanders may read to the men the notes which have just been given in this pamphlet.

After this has been done, the duties of N.C.O.'s and men in advanced guards should be explained and practised in phases.

PHASE 1.—CONNECTING FILES.

The various parts of an advanced guard are linked-up by chains of men, who are called connecting files.

The advanced guard keeps touch with the main body in a similar manner.

To perform this apparently simple duty, the men must be very alert and painstaking.

1. Connecting files are always dropped from a body in front and never sent forward from one in rear.

2. To prevent losing touch at the bends of a twisting road each connecting file drops back so that he NEVER LOSES SIGHT OF THE CONNECTING FILE BEHIND HIM, however sharp the corners of the road may be.

3. If the road is very twisted, the forward body of troops will have to drop more connecting files or else it will lose sight of the connecting file behind it.

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4. To do this there should be an N.C.O. at the rear of each forward body, who will be responsible for dropping connecting files, when necessary.

5. If the road becomes very straight, the connecting files will adjust their distance to the normal one from the rear, the foremost connecting files will, in this way, be pushed forward against the body of troops in front. The N.C.O. in rear of it, who is responsible for connecting files, will fall these men in, and they will march in fours at the rear of the party.

6. Thus both the number of connecting files and the distance between them differ according to the nature of the road.

7. The normal distance between connecting files is about 40 yards on a straight road by day.

8. By night, connecting files should usually not be more than 4 paces apart.

9. At each cross or fork road each connecting file will indicate, by pointing, which road is to be followed.

10. By night, O.C. vanguard will leave one man at each fork road to "block" the wrong one. These men will fall in and march at the head of the main body. They will catch up the advanced guard at long halts.

11. Connecting files will constantly look both forwards and backwards.

12. They will always run to meet a message if one is passed along the files.

Training Note.

Each platoon commander should detail one section to act as a forward party of troops; another section will supply connecting files, while the remainder of the platoon will follow about 400 yards in rear of the first one. The leading section marches off. The one supplying the files follows, dropping files as it goes. After about 3 or 4 minutes the remaining sections will follow. The leading section should choose a very tortuous route—if in barracks it should wind in and out amongst the buildings.

The sections should "change over" until each has supplied the connecting files.

Verbal and written messages should be passed backwards and forwards along the files. (In practice it is usual to send messages whenever possible by cyclist.)

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PHASE 2.—March Discipline.

Although march discipline applies to any march on a road it is convenient to deal with it under the heading of advanced guards.

1. Troops will march well closed up.
2. They will keep the normal distances between units.
3. They will march on the correct side of the road, leaving as much of the road as possible clear.
4. Before halting troops will always close up.
5. Troops will fall out only on the proper side of the road and will not cross the road.
6. Files will change over at each halt.
7. Under no circumstances will men fall out on the march without leave (written leave when possible) from the officer marching in rear of the company.

It is exceedingly irksome to troops to keep to the side of the road, especially when the road has much camber.

If the extreme importance of doing so is explained to the men, it will probably not be so often necessary to check them for straggling across the road.

Picture to the men some incident similar to the following one :—

The company has been acting in an advanced guard.
It has attacked the enemy and has failed in its attack.
The men, with their ammunition all spent, lie under a galling fire unable to advance or retire.
The main hope is that the artillery will soon come into action and silence the enemy's fire.
A mile behind, the artillery is trying to press forward to help. It cannot do so, however, as the infantry in rear are straggling all about the road and it cannot pass those in rear.

Thus there are times when men's lives may hang on the good march discipline of those in rear.

PHASE 3.—Automatic Protection.

This duty, though it applies to every occasion in war, can be conveniently dealt with here.

At all times in war each unit, when halted, must provide for

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its own protection, no matter for how short a time it halts, and no matter how safe it fancies itself to be.

Each company or smaller unit (even if only 4 men are concerned) must, when detached, provide protection for itself when halted.

Whenever a company, platoon, or smaller body is halted on the training ground and is resting, the leading section of it will provide a sentry or sentries who will stand at some point of vantage close by and keep a look-out.

This is arranged for by the section commander without orders.

The platoon commander is, however, responsible for it being done.

N.B.—It is highly important that this should ALWAYS be adhered to as it *becomes a second nature* if practised as a MATTER OF ROUTINE.

If this precaution is neglected disaster will assuredly follow sooner or later.

PHASE 4.—PASSING THROUGH A WOOD.

Troops, when marching through a thick wood, or village, where there is any possibility of meeting the enemy, will invariably fix their bayonets.

Each platoon commander should have the bayonets fixed, while on the march, without orders from his superiors.

The bayonets must be unfixed again BEFORE leaving the cover, unless an attack is intended.

At such times rifles must never be slung.

PHASE 5.

Each platoon should now act as a small advanced guard as follows:—

Detach 4 men to act as an enemy.

Half of one section should be dispatched as the point of the advanced guard.

The point will drop connecting files as it advances.

When it has gone about 200 yards another section, to which the remaining half of the first section should be attached, will follow as the vanguard, dropping files as it goes.

When the vanguard has covered about 400 yards, the remaining two sections should follow as the main guard, leaving one man to represent the main body.

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The main guard will drop connecting files to keep touch with this imaginary main body. When the main guard has advanced some 300 or 400 yards, the main body, represented by this single man, will follow the advanced guard.

PHASE 6.

Let the 4 detached men, above mentioned, act as a hostile patrol. Conceal them somewhere on the route by which the advanced guard will pass.

Let them open fire on the "Point" when it approaches them.

The Point, as soon as it is fired at, will send back a messenger and will lie down and open fire.

The vanguard on receiving the message, or on seeing the fight, if it is able to do so, will extend and push forward towards the flank of the enemy's scouts, threatening to envelop them and cut them off.

To avoid capture the hostile scouts will then withdraw.

As soon as this happens the point and vanguard will push on as fast as possible to regain the distance from the main body, which they must have lost while fighting.

PHASE 7.

Let two platoons, less one section, which will act as enemy, be joined together and let them act as an advanced guard.

Conceal the hostile section as in Phase 6.

As soon as it open fire the point will lie down and fire, the vanguard will attack it as in Phase 6, but will not be able to make much headway.

The main guard will extend and reinforce the vanguard and further extend its flank so as to envelop the hostile section, which, to avoid capture, will retire.

The advanced guard will then push on to regain its lost distance from the main body.

PHASE 8.

Let two platoons act as an advanced guard, as in Phase 7, but let the enemy consist of the other two platoons.

The advanced guard will then not engage the enemy too closely, but will fire at him from a respectful distance and await orders from O.C. main body.

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HINTS ON GENERAL CONDUCT OF ADVANCED GUARD.

1. Speed in an attack by an advanced guard is the chief essential.
2. Extensions should be greater than in a normal action.
3. O.C. advanced guard will report everything that happens without delay.
4. If nothing unusual happens he will frequently report "all's well" and "all clear."
5. The threat of envelopment, rather than rifle fire, is the chief weapon of an advanced guard.
6. The main body halts at fixed times and the advanced guard conforms, when possible. It does not, however, halt in a bad tactical position, such as a village, etc., but clears it before halting.

REARGUARDS are to prevent the march of the main body from being hindered by attack.

A REARGUARD is above everything a FIGHTING FORCE.

It is divided into a main guard and rear party, corresponding to the divisions of an advanced guard. They are linked up in the same way by connecting files.

If not engaged, its duties are easy.

No more difficult task can be given to any soldier than to command a rearguard when attacked by an enterprising enemy.

Its chief duties under such conditions are :—

1. To offer enough resistance to allow the main body to retire unmolested.
2. Not to allow the enemy to approach itself and engage it too closely.

If it fails in this it will be enveloped and cut off.

This is the constant dread of a rearguard.

A rearguard must, to prevent this, keep a keen watch on its flanks to prevent being enveloped.

To achieve this most difficult middle course, rearguards—

1. Choose positions with extended fields of fire to force enemy to deploy early and so to delay.
2. Occupy positions with very wide extensions.
3. Open fire very early, with the same object as in No. 1.
4. Quit positions before the enemy approaches too closely.
5. The whole of a rearguard never retires at the same time.

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6. One portion retires and occupies another position.
7. The other portion holds the original position.
8. The first portion then retires beyond the second position and occupies a third one behind it, etc., etc.
9. It is better to sacrifice portion of a rearguard than to allow the enemy to fall on the rear of the main body and turn the retirement into a rout.

NOTES ON REARGUARDS AND RETIREMENTS.

PHASE 1.—Retiring from a Position.

When individual men choose their firing positions in a rearguard action, it is most important that they should choose a position from which they can retire without presenting a larger target to the enemy than they do when in a firing position.

This can be done by—

(1) Taking up a fire position rather on a reverse slope so that the man can only just see over the crest when firing.

If he lies flat he will be invisible.

And, by lying flat and then crawling back, he will be able to retire unseen.

The only disadvantage to such a fire position, under normal conditions, is that the firer's head shows distinctly against the sky. In a rearguard action this is not of great importance because, firstly, the extensions are greater and the targets so offered to the enemy are few and far between, and, secondly, it is usual to retire before the enemy gets to close quarters, when the disadvantage would be more marked.

(2) By taking up a position just within a wood which would cover movement and retirement.

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The men of a platoon should be formed up in a hollow and the section commanders should go out some hundred yards to the front, and should lie down facing their concealed sections. The platoon commander should then order the men to crawl up the slope until they can see their section commanders. They should "snap" at them, say, ten times and then crawl back, if possible, without being seen by their section commanders, who should, if they see and recognise a man, call out his name.

If a wood is available for training, the men can, in the same way, be practised in advancing to the edge of it and retiring again without being detected.

PHASE 2.

The platoons may now practise a small rearguard action. To get the full benefit from the instruction a piece of undulating ground with parallel ridges should be chosen for this manœuvre.

Detach four men to act as the enemy.

Let two sections take up a position as suggested in Phase 1 on a ridge facing the enemy. The remaining two sections should take up a second position in rear of the first one but not too close to it.

The men should be extended to about eight paces in each section.

Let the enemy on a very broad front attack the first position.

The men occupying it will all open fire as soon as they can see the enemy. Before the enemy can approach the first position or threaten to outflank it, one of the two sections holding it will retire rapidly through or round the second position and will take up a third position in rear of the second one. As soon as this section has made good its retirement the section still holding the first position will retire, leaving a few men to cover their retirement.

These men will follow the remainder as soon as its retirement is safe.

This section from the first position will retire to the third position, whereupon—

The second position becomes the new first position, and the same tactics are repeated.

The first time that this phase is attempted the enemy should

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move slowly, but the second time they should move rapidly and attempt to isolate and cut off the sections of the defenders.

Each platoon should practise this phase.

Three platoons might then attack the remaining one, which would fight a rearguard action as in Phase 2.

The attack by the three platoons would be carried out as an attack by an advanced guard. Much dash and determination should be displayed by the attackers.

FLANK GUARDS.

The occasions on which a platoon commander or even a company commander will have to act as a flank guard will probably be very few.

The best method of supplying a flank guard for a small force would seem to be a screen of scouts towards the enemy.

This screen would at intervals along its length be supported by sections or platoons.

This screen would sometimes be halted and would face the enemy.

At other times it would move parallel with and slightly in front of the main body of troops to be covered.

Training Note.

Companies should, after a lecture in barracks and after practising Phase 1 of this subject, march to their training ground as an advanced guard.

They should practise the remainder of the phases of advanced guards and a rearguard action, and should then return to barracks as a rearguard.

Unless the lecture is delivered before leaving barracks little benefit will accrue from the march out.

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Subject 6.—ECONOMY OF AMMUNITION. HOW IT CAN BE EFFECTED.

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ECONOMY OF AMMUNITION.

THERE is no more important subject in infantry training than how to economise rifle ammunition.

Owing to its weight the amount which a man can carry is strictly limited.

It is quite easy for a reckless and foolish man to fire off in 20 minutes the ammunition which should last him for 20 hours.

A man's life may often depend on his having a dozen rounds of ammunition left to deal with some emergency, such as a counter-attack or a cavalry charge.

There are two great rules concerning ammunition :—

(1) A man who fires an unnecessary shot spends a round which in half-an-hour might save his life.

(2) Nothing excuses a man, in war, who ever has his chamber empty or his magazine less than half full. A man's life often hangs on his capacity to fire five or six rounds without an instant's delay.

ECONOMY OF AMMUNITION IN THE ATTACK.

There are, in war, few more terrible situations than that of an attack which runs out of ammunition. The men lie under a murderous fire to which they cannot reply. They are unable to advance, as they can give each other no covering fire. They cannot retire. They can only lie flat and pray for dark or reinforcements.

METHODS OF ECONOMISING AMMUNITION IN THE ATTACK.

1. The first rush of each line, when breaking cover, should be as long as possible.

2. The first line of an attack should push on until stopped by fire.

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3. It should not reply, but should obtain reinforcements, to cover whom it should give covering fire.

4. NEVER SHOULD MORE THAN TWO ROUNDS OF COVERING FIRE BE GIVEN.

5. NEVER TILL WITHIN 400 yards of the enemy should men fire without an order.

6. Rushes at more distant ranges should be long so as to reduce the number of rounds spent to cover each yard advanced.

7. At close ranges large parties should rush together for ammunition economy. (See "Notes on Elementary Field Training.")

8. NEVER SHOULD FIRE BE GIVEN TO COVER A RUSH WHICH COULD BE MADE WITHOUT IT.

9. Until a position is reached from which the fire of the enemy can be beaten down NOT A ROUND SHOULD BE FIRED EXCEPT TO COVER MOVEMENT.

10. It is by movement and not by fire that an attack will dislodge the enemy from his position.

11. The third and fourth lines of an advance should throw ammunition along the line when they reinforce it. (This *must* be practised in field training.)

12. The mules should bring up ammunition whenever possible, and at all costs when a position has been taken.

THE ECONOMY OF AMMUNITION IN THE DEFENCE.

More ammunition is available in the defence than in the attack, and the question of economy is not so vital.

Proper economy in the defence is best effected by—

(1) Making range marks in the field of fire.

(2) Using range cards.

(3) HOLDING FIRE AND NOT OPENING FIRE AT LONG RANGES AND AT UNPROFITABLE TARGETS.

(4) Always limiting the number of rounds to be fired when giving fire orders. *Never more than five rounds* should be ordered and fewer are advisable.

(5) Giving fire orders as long as men will obey them and NOT PERMITTING INDEPENDENT RAPID FIRE UNTIL IT IS IMPOSSIBLE TO WITHHOLD IT.

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(6) Section commanders should never fire except in emergencies, but should control and observe the fire of their men.

(7) Platoon commanders should not fire except in self-preservation.

To enforce economy, detail one man per section, in an attack, to count the number of rounds fired per man in his section. Tell the result to the company. This should be done in attacks and defences in training.

To practise economy in the defence let a few men attack the company and let them charge it.

Detail a man to count the rounds, explain that if 100 rounds are fired in one hour 600 would be fired in six hours.

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Subject 7.—WOOD FIGHTING.

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SOME NOTES ON WOOD FIGHTING.

Wood fighting is among the most difficult tasks which fall to the lot of the foot soldier.

Lack of suitable training ground has prevented our troops from obtaining sufficient practice in it in England.

As our Continental armies are constantly practised in this branch of fighting, our officers and men now stand at considerable disadvantage.

The chief characteristics are these :—

A wood fight is always a soldier's battle. It is a duel of wits between the individual men of the opposing forces.

Each unit concerned has to win its own little fight.

It cannot, as a rule, expect support from the troops on either flank, as they cannot see to fire at its opponents, nor can they come to its help and thus leave their own front unguarded.

Nor can a force, when attacked, rely on the supports and reserves coming quickly to its aid, as movement is necessary slow in woods.

It is most difficult, moreover, to discover what is the strength of the enemy owing to the limited field of view.

The three chief requisites in wood fighting are :—

(1) Unceasing caution and vigilance by every individual.
(2) Ability to aim and fire quickly at a suddenly appearing target.
(3) Self-reliance of the commanders of small units, every section commander realising that he is fighting a small separate battle of his own, which he must win without help from others.

The longer that troops can fight as units, and not each individual for himself, the better the chances of success in wood fighting. To obtain this result commanders must realise that the small units are self-dependent and more or less independent. If a company commander attempts too long to exercise control in wood fighting, the whole structure of the company will crumble, and it will break up into so many individuals.

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THE ATTACK IN WOOD FIGHTING.

PHASE 1.—Rapid Aiming and Firing at an Unexpected Target.

Conceal nine or ten men in a wood, some on the ground, others in trees, and tell them to remain hidden and "snipe" at the company as it passes through the wood.

Let them know the direction of the company's intended advance.

Let each platoon in turn, with men extended to four paces, pass through the wood.

Warn the men of the platoons that there are concealed in the wood, both on the ground level and above, snipers whom they must attempt to see and shoot before they can do damage.

PHASE 2.—The Formation for a Company in Wood Fighting.

It is believed that the best formation for fighting in woods is one of but little breadth but of great depth.

This does not apply to *the passage of troops through a wood as an incident in an ordinary attack.*

These remarks apply only when the majority of the fighting is expected to take place in woodlands.

The platoon commander may be able to control his command if it is distributed in short lines following each other, which he could scarcely hope to do if his platoon was extended in one long line.

There is the additional advantage in this formation that each section is reinforced by men of the same platoon.

A company formed up for wood fighting should, therefore, have three platoons in line, and one in reserve in rear.

Each platoon would be in column of sections.

Each would be preceded by three or four scouts.

(The objection to this formation in a normal attack or advance in the open would be that each successive line would consist of parts of different platoons under the direct command of no one

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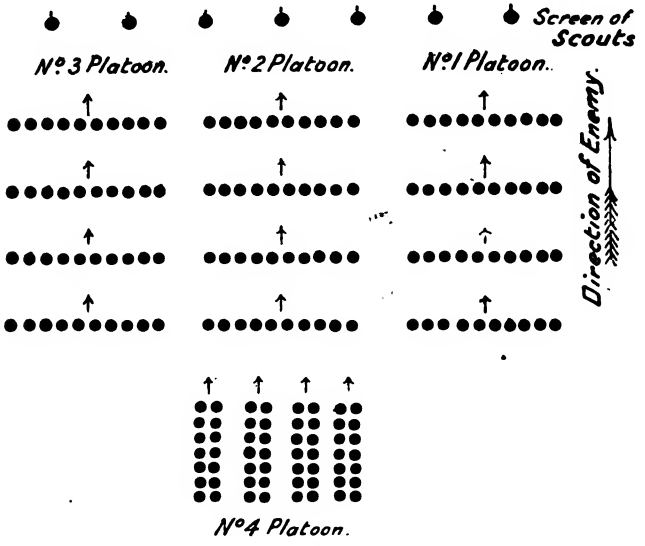
in particular. This would result in indecision, a slow advance and consequent failure from lack of driving force.)

PLAN OF A COMPANY IN FORMATION FOR ATTACK IN WOOD FIGHTING.



As will be seen from this plan, it is often advisable to keep the sections of the reserve platoon in file, as they are thus more under control and can more quickly move to reinforce the firing line.

The lateral interval between sections in each line would be small and would exist only to mark the flanks of each section.

The distance between each section and the one following it would depend on the thickness of the wood. It should not exceed 50 yards. The denser the wood the less the distance.

Each section should keep touch with the one in rear by connecting files.

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Training Note.

Explain this formation and its objects to platoon and section commanders and let each platoon work through woods in column of sections. After this has been done form up the company as shown in the diagram.

The orders to be given to the assembled platoon commanders to get the company into this formation would be :—

"The company will advance in this direction (point to the direction) with No. 1, No. 2 and No. 3 platoons in the front line, each platoon in column of sections, men extended to three paces. No. 4 platoon will follow in reserve.

"No. 2 platoon will get into column of sections AT ONCE, with (say) 30 yards distance between each section, men extended to three paces.

"No. 1 platoon will be then formed up in a similar formation five yards to the right of No. 2, and No. 3 five yards of the left of No. 2.

"No. 4 will follow 100 yards behind the rear of No. 2 platoon. Its sections will be in file, facing the front and abreast of each other."

Training Note.

Practise getting into this formation from column of route, column of platoons, or close column of platoons. It will tend to make the company "handy."

It is only by drill, or applied drill, that difficult tasks can be accomplished under disadvantageous circumstances.

Then let the company advance across a piece of open ground in this formation. Tell the front line they are held up, and let the other sections in rear reinforce it consecutively. This is only for instruction, as THIS FORMATION IS ONLY ADAPTED FOR WOOD FIGHTING. IT WILL NOT BE USED WHEN PASSING THROUGH A WOOD, WHICH IS ONLY AN INCIDENT IN AN ATTACK.

PHASE 3.—A Company Working Through a Wood in Wood Fighting Formation.

1. Form up the company in this formation and let it enter the wood.

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2. Detail an officer or N.C.O. to direct the advance of the company, if necessary by compass. (In Phase No. 4 the best way of doing so will be explained.)

3. The middle of the leading section of the centre platoon directs, and intervals and distances must be maintained from it. Every man must know this.

4. If the wood is thick the directing section must be halted by its commander every 300 or 400 yards in order that intervals and distances may be corrected throughout the company.

Unless this is done, touch will be lost, the company dispersed, and individual sections may be defeated in detail.

5. The platoon commanders should, as a rule, march with the second section of their platoon.

PHASE 4.—Directing a March by a Compass Bearing.

The best method of doing so is this:—

The officer or N.C.O. who is to direct will march about 10 paces in rear of the directing section of the company. He will detail one man, who will direct the line of the advance of this section. The officer or N.C.O. with the compass will warn this man that he must constantly look back to him for signals.

Before the advance commences this officer will stand beside the directing man and will roughly dress the front line of the company by signalling with his arm to each flank if it is to dress up or to dress back. He will give a point for the directing man to march on.

When the company advances he will drop to about ten paces behind this man. He can occasionally halt and check the direction by taking a "rough sight" on this man in front of him.

He can then signal to him to march a little left or right incline, as is necessary.

In this way the man directing marches steadily on without checking the pace, while the officer can halt occasionally to correct the line of advance by his compass, which he could not satisfactorily do on the march, and if he were himself directing the leading line by marching in it, as if he then halted to take a bearing the line would check, become curved and would lose direction.

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PHASE 5.—What to do on Meeting the Enemy when Advancing Through a Wood.

If the leading line of a company advancing as in Phase 3 is fired on, every man who sees the enemy will instantly open fire.

(1) *If the enemy runs away they will continue to fire after him, but will* NEVER CHASE HIM, as by doing so they would disorganise the whole company and become detached.

(2) If the enemy holds his ground, those who can see him, or who are being fired at, will throw themselves down and, if possible, return the fire. *All the remainder of the first line will halt and will take up their dressing from those who are engaged and will then lie down.*

In this way the line of the company will be preserved straight and unbroken.

If part of the line pushes on, the enemy will probably break in between the remainder of the company and those who have gone forward. These will thus be cut off and surrounded.

The ideal method of moving through a wood is in a long, straight wave rolling steadily forward, and not in a series of disjointed ripples.

Thus to recapitulate:—

If small hostile bodies are met they are driven back almost without any check to the line, those actually firing doubling up to regain their places.

If large bodies are encountered the whole line halts, keeping as straight a front as possible.

If the first line is thus held up, the part of it that is engaged will be reinforced by the sections in rear of it closing up to it.

If this does not dislodge the enemy, the platoon in reserve can be thrown in at the critical point.

Training Note.

Let the company practise both procedures.

Detach two men from each section and conceal them as an enemy in a wood. Place them in line, and let six of their number take up an advanced position 150 yards in front of the others.

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The company can then advance through the wood in the formation suggested in Phase 3.

When the weak advanced party of the enemy is met it will instantly be driven in.

When the enemy's main position is encountered, the leading line of the company will halt until it has been sufficiently reinforced to dislodge the enemy.

Even then the attackers will not pursue except with fire, as the straight front of the company would otherwise be broken.

Before this is attempted, every man should know what is expected of him in wood fighting.

PHASE 6.

If the company is held up by the enemy, every man, not actually engaged, will at once dig cover for himself with his entrenching tool.

The supports and the reserves will do likewise, so that they may act as a rallying point if the company is driven back.

WOOD FIGHTING.

THE DEFENCE.—Its Characteristics and Peculiarities.

The defence of a position in wooded country differs considerably from that of one in the open.

Owing to the limited field of view it is almost impossible to tell when and where an attack will be delivered, or what its real strength is, until it has been fully exerted.

Surprise and sudden attacks can very easily be made. On this account reserves can seldom successfully reinforce a hard-pressed firing line, as before they can arrive the attack has either failed or has broken the line.

The most practical way of using supports and local reserves in wood fighting is, therefore, to entrench them in successive lines of defence behind the firing line.

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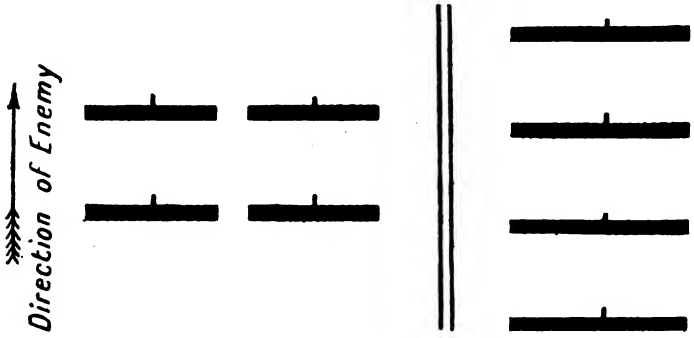
Distribution of a Company in the Defence in Wood Fighting.

It is therefore best to form the company into two or more lines of defence. If the frontage allotted to the company is long, then there should be two platoons in the front line and two in the second one.

If the company frontage is short, there might be four successive lines, one behind the other, each consisting of one platoon.

These two alternative methods are shown in this diagram :—



It is impossible to lay down which system should be used, as local conditions should alone decide.

It should, however, be borne in mind that *it is far better to hold two lines strongly than four lines weakly.*

What the exact distances between the lines should be cannot be stated. About 200 yards in a thin wood may be suggested. The denser the trees are the closer together the lines should be.

The Siting of Trenches in Woods.

The following rules should be considered when choosing the actual position of the trenches. They are given *in the order of their importance.*

(1) *Do not make a trench within* 300 *yards of the front edge of a wood.* Such a position is disastrously easy to shell.

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(2) Avoid positions near roads and rides, *which are likely to be shown on a large scale map.* The enemy artillery can bombard these spots by aid of their maps without necessarily being able to observe the bursts of their shells.
(3) Choose a situation where trees in front will lend themselves as easy supports for the rapid making of entanglements and obstacles.
(4) If possible, obtain a field of fire of not less than 100 yards, but of not more than 250 yards.
(5) Select a place, when possible, where a fold of the ground or dense undergrowth will make communicating trenches to the rear invisible.

It will be noticed, as curious, that there are three points which are more important than the securing of a good field of fire when siting a trench in a wood.

The order in which the defence should be organised for wood fighting :—

(1) The most immediate task is to construct obstacles in front of the first line of the defence.
(2) This front line should then be entrenched with all speed. Men and tools should be lent to it by the lines in rear.
(3) Each line of defence in rear should then successively entrench itself.

Covering Troops.

Until the front line has dug itself in, it must be covered by troops to prevent it from being surprised.

In the case where a company is to occupy a position of two lines each two platoons strong, the two platoons of the front line should construct their trenches, while the other two platoons, who are to form the support, should act as a screen to the front of them.

In the same way, when four lines are to be formed, the rearmost platoon should, until the front line is entrenched, act as a covering party to the others.

How far to the front the covering troops should be sent out ought not to be ruled.

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Trench Digging Under Fire.

In wood fighting, it is often possible to dig trenches quite close behind troops who are actually engaged.

In this way resolute covering troops should be able to hold the enemy until the front line has dug some cover for itself, when they should fall back through this front line.

Again, the second line can often entrench when the front line is being attacked.

At such times the following rule must never be broken. TROOPS MUST DIG WITH THEIR KITS ON AND WITH THEIR LOADED RIFLES LAID DOWN BEHIND THEM.

Although entanglements should be constructed before trenches it is found more convenient here to deal with the trenches first.

The Type of Trench.

There are so many good designs for trenches, each one favoured by different experts, that it is impossible to state what type should be used.

It is believed that the one described in "Notes on Elementary Field Training" * gives the necessary protection as quickly and with as little work as does any other type of trench.

Its depth is about 5 feet, its width about 2 feet. The earth is thrown to the rear and to the ends of the trench, where it forms traverses. Each section of men has three short lengths of trench, each holding about five men. The centre one is 6 feet in rear of the others. There is a 6-foot lateral interval between each length.

There will be found in the book referred to above a very simple drill for making it, which is believed to be extremely useful.

Plan of the Trenches.

The most favourable arrangement of trenches for wood fighting would seem to be a *continuous line of trench, strengthened at inter-*

* "Notes on Elementary Field Training," by "Grenadier." Published by Hugh Rees, 5, Regent Street, W. Price, 1s.

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vals by circular, self-contained redoubts. If the enemy, by suddenly massing troops at one point, succeeded in breaking the line of trenches, the flanking fire from these redoubts should hinder him or prevent him from advancing through the gap which he had created.

These redoubts would be able to bring cross-fire to bear on the enemy when he comes to close quarters.

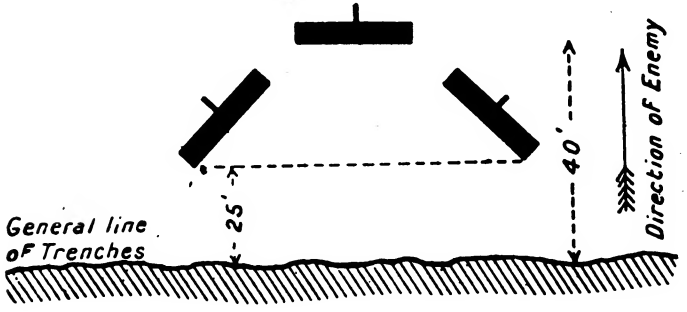
They would form rallying points for the line, especially if they were armed with machine guns.

These redoubts would not, at first, be made circular, but would simply consist of the three trenches of one section of men. They would be in front of and bowed out from the line, so as to form a salient or point towards the enemy.

After this, at the first convenient opportunity, side faces and the rear faces of these circular redoubts would be added.

When there are sufficient diggers and when they are not molested, these rear faces of the redoubts could be made at the same time as the front ones.

The shape of the *front of a redoubt*, as at first constructed, would be this :—



The drill for making these trenches would be the same as that in "Notes on Elementary Field Training," except that the centre section would advance two paces instead of stepping back that distance. The outer squads would then form back half right and half left, pivotting on their inner ends.

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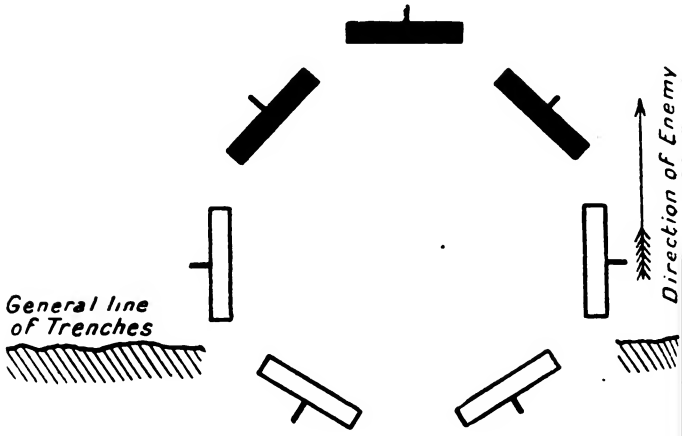
As soon as possible, four more lengths of trench would be added to complete the redoubt. Of these, two would face to the flanks and two to the right and left rear, as shown below.



The front trench of the redoubt would be about 40 feet in front of the general lines of the trenches. Big traverses would be needed to protect the ends of the flank and rear faces of the redoubt.

There should be one redoubt in the frontage of each company, or two if that frontage is very long.

If time allows, each line of the company could have its own redoubt.

The front line of the company, consisting of two platoons, would appear as drawn (see Diagram 1, page 49, facing). The line as first made is shown, the redoubts are not finished.

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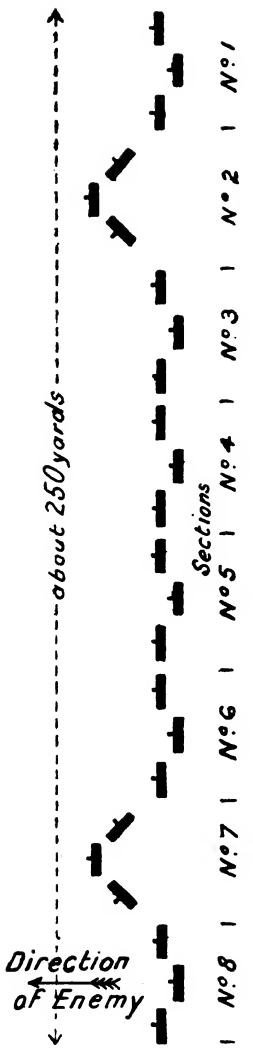

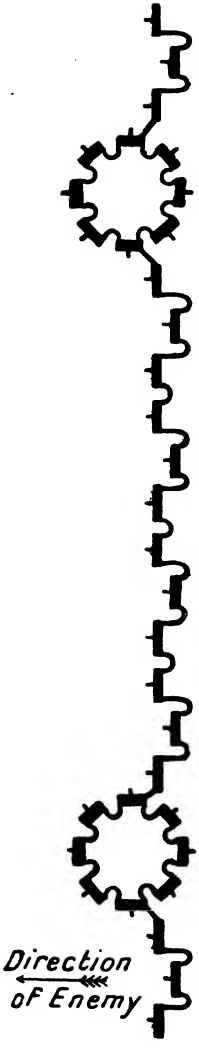

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When these trenches were completed, the sides and rear of the redoubts would be made.

After this, all the short lengths of trench would be linked up by U shaped pieces of trench from the rear corner of each to the rear corner of the next.

The next diagram (see Diagram 2, previous page, 49) shows the line of trenches and redoubts so joined up, with the flanks and rear of these redoubts completed.

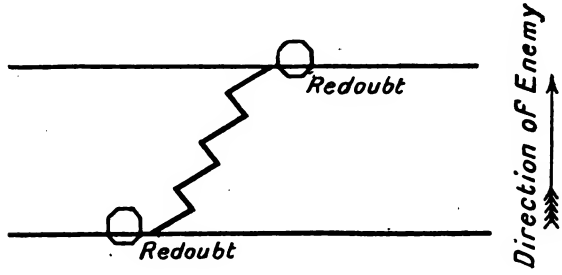
Time Needed to Make these Trenches.

To dig the section trenches and front faces of the redoubts with full-sized tools in ordinary ground without too many tree roots, 3 Hours.

It should be possible, by making the trenches only 1½ feet wide, to start with, to reach a depth of 4 feet, which would give very fair protection, in under 2 Hours.

To complete the redoubts and to join up the short lengths of trench, a further 2 Hours would be required.

Whenever a front and rear line of trenches are completed, they should be joined by a zigzag connecting trench, thus :—



These connecting trenches should start from close to a redoubt. They should run obliquely to the front, and not straight to the rear.

When such a trench has been made, another one should be constructed, if time allows, making an angle whose apex is pointing to the rear.

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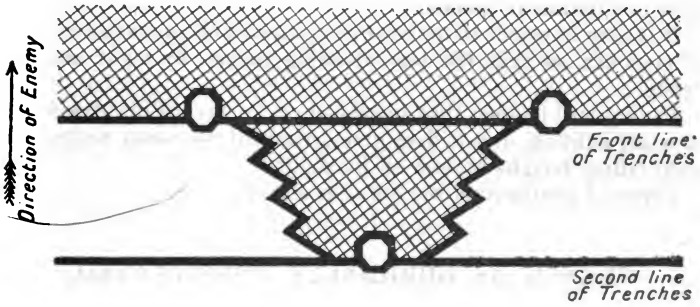
These connecting trenches should be about 5 feet deep, with the earth thrown to the rear.

They can then be used as fire trenches. If the enemy breaks through the front line, the inrush of the enemy can be restricted to the space between two connecting trenches which would be manned.

The meaning of this may be clearer when expressed in a diagram. The shaded part is that which has been overrun by the enemy.



It will be seen that the enemy has broken the line. He, however, cannot turn to a flank and roll up the unbroken part of the first line.

He is prevented from so doing by the connecting trenches, now manned and used as fire trenches. He finds himself between a converging fire from them. While he is in this difficult position, troops are being massed to retake the fallen part of the line.

The defence of a position, in wood fighting, begins with a line of covering troops lying behind trees and obtaining what cover they can. It ends in a series of lines of entrenchment strengthened with redoubts, and linked up by connecting trenches.

There are entanglements and obstacles in front of every line of the defence. There are bomb-proof shelters for the troops occupying the fire trenches.

It is not necessary here to give designs for the bomb-proof shelters.

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Overhead Cover for Fire Trenches.

It is usually very unwise to provide overhead cover to fire trenches in the open, because—

(1) It makes them an easier mark for artillery, whose shells will bury the men beneath the roof of their own trenches.
(2) It makes the task of keeping the men awake at nights more difficult.

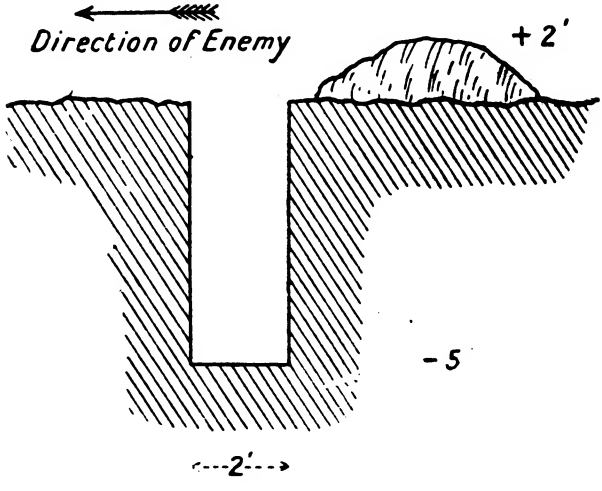
In wood fighting the artillery fire will be more or less unaimed and unobserved, so that the first objection to overhead cover does not obtain in woods.

It is easy in woods to make almost impassable obstacles in front of trenches, so that the fear of being rushed by night scarcely exists.

Thus it will be seen that overhead cover has no disadvantages in wood fighting, and it does give great and necessary protection from falling boughs broken off by shells.

Types of overhead cover are now shown.

TRENCH AS ORIGINALLY CONSTRUCTED.



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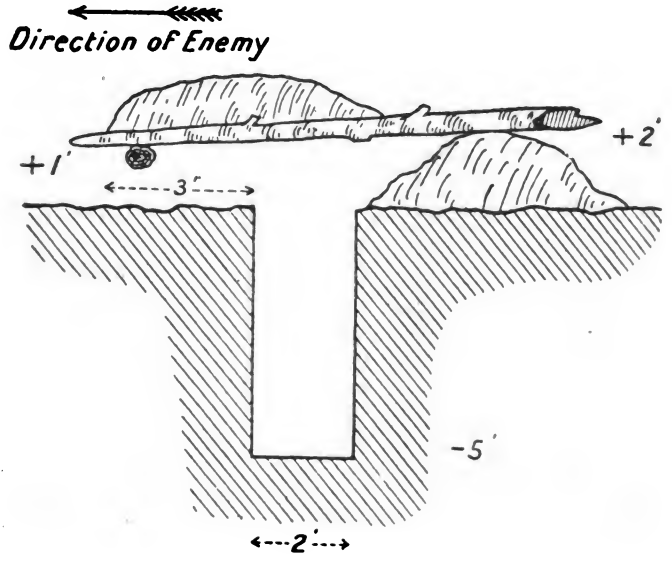
TRENCH IMPROVED WITH OVERHEAD COVER.

A log is laid on supports about 3 feet in front of the trench and about 1 foot above the ground.

On this, rafters made of branches are laid with their rear ends resting on the bank behind the trench. Upon these is a layer of small branches, on which about 1 foot of earth is laid.



ALTERNATIVE TRENCH, WITH A LOG

laid on supports above the front of the trench to prevent falling boughs from injuring men.

This should be used if there is not time enough to make overhead cover, as shown in the previous diagram.

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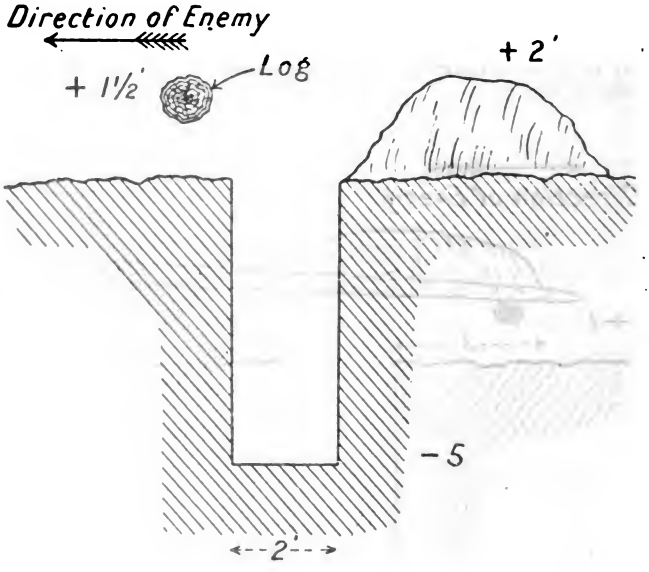
The log is, in this case, close to the front of the trench, the better to protect the men's heads.



CLEARANCE OF FOREGROUND IN WOODS.

There are two forms of clearance of foreground which are desirable :—

(1) Trees which might, if felled by shells, fall on the trenches should be cut down.

(2) In thick woods or in undergrowth glades should be cut to the front, especially opposite the redoubts and machine guns.

These glades should run obliquely, and not straight to the front. They will facilitate easy flanking fire against the attack.

Of these, the edges which are nearer to the trenches should be entangled, so that the enemy may be encouraged to halt in them and become an easy target.

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Entanglements and Obstacles.

Barbed-wire entanglements are the most efficient obstacle. It is easy to make entanglements in a wood, as the supports for the wire already exist.

The most effective method is to form a net of crossed wires from tree to tree, about one foot above the ground. These wires should be as tight as possible. Above these should be loose hanging festoons of wire, as loose swinging wires are far harder to cut than are tight ones.

The first procedure in the defence should be to entangle the front by twisting a few strands of wire from tree to tree at several heights. This can be done in a few minutes.

Distance of Entanglements from Trenches.

For night fighting, entanglements should be about 15 yards to the front. These should be constructed first. For day fighting, another line of entanglement, about 100 yards to front, should suffice.

The thicker the wood the closer the obstacles should be to the trenches.

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Subject 8.—USE OF COVER.

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USE OF COVER.

It is absolutely essential that, early in his training, every man should learn—

(1) What cover is bullet-proof.

(2) How best he can get protection behind it.

It is certain that, in war, hundreds of lives are lost through men hiding behind small trees, thin banks of earth, and such cover, believing them to be bullet-proof. Again, more men than would at first be imagined seem to consider, like the ostrich, that if they cannot see the enemy he cannot see them.

When crawling forward they arch their backs though they keep their heads down.

They fancy that they are safe, as they cannot see the enemy, though, in point of fact, their backs offer a fine target.

PHASE I.—Crawling.

It is much more difficult to crawl well than would at first be supposed.

It is quite certain that the men will at first think that there is nothing to be learnt about crawling.

It is very desirable to demonstrate to the men how important good crawling may be as a comparatively safe means of covering ground, when to run would be exceedingly dangerous.

To give a good demonstration, choose a piece of almost flat ground, with a few very slight undulations in it.

Before the platoon arrives, try to find a fold in the ground, from which part of the field is not visible, even if one crawled forward a few yards.

Choose a position for the platoon so that, if lying down, the men of it would not be able to see a man lying in this fold of the ground. There are few fields so flat that it is not possible to hide even a whole company somewhere in them, if the men lie quite flat.

March the platoon to the selected place. Point out to the men that the field appears almost flat, and that it would seem difficult to conceal anyone in it.

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Then make the platoon lie down, facing the fold in the ground. Detach four or five men and take them to the further side of the hollow. Let them advance towards the platoon, but as soon as they enter the fold in the ground make them throw themselves flat, and let them crawl forward, keeping as close to the ground as possible. This should make clear to the platoon the great possibilities in crawling.

Now practise the men in crawling. If the ground is damp men can practise indoors.

To offer the least possible mark when crawling a man—

(1) Should lie absolutely flat, with his elbows to the front, his wrists under his chin. His back should be hollow.

(2) To advance he should bring one knee forwards, keeping the *inside of the knee* flat to the ground and his back hollow. *Above everything he must not draw this knee under him.*

He must then push himself forward with this leg, helping his progress with his elbows.

In good crawling a man presents scarcely more of a target when moving than when stationary.

Most rifle bullets in war go too high.

A line of men, when crawling, presents a very poor target to rifle fire.

Almost every bullet will pass over their heads.

By night a company might well crawl to within a few yards of the enemy without suffering any loss.

PHASE 2.—Firing Round Cover.

This phase is suitable for practice on a wet day, as it is best performed indoors.

Lay six packs on the floor, two at the bottom, two above them, and again two on top. Place a mirror opposite to them.

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Make a mark on the bottom of the mirror with soap to represent a target.

Make each man, in turn, lie down behind the packs with rifle. He should be in such a position that he cannot see the soap mark on the mirror. Then let him assume a position so that he can fire at the soap mark.

He will see in the glass how much he is exposing himself, and how he can improve his position.

Tell him that he should fire round cover, and not over it, whenever possible.

PHASE 3.—What is Bullet-proof.

Every man must be taught the following rules. If it is possible to give demonstrations on the range, it will impress them on the men for life.

(1) Most kinds of earth, a rifle's length thick, is proof against bullets.
(2) Wood is scarcely ever thick enough to be proof.
(3) A very thick tree may turn a bullet, though very few are ever thick enough to be proof.
(4) Any brick or stone wall can usually be regarded as proof. They are very liable to be shelled.
(5) Shingle 1 foot thick, or coal 1½ foot thick, is proof.

Each man should be made to repeat these rules.

Men should be frequently asked when field training if a certain bank or wall is bullet-proof.

PHASE 4.—Cover from Shell Fire.

Explain to the men that most shells descend at a steeper slope than does a bullet.

Shells either burst on the ground or in the air.

Only in a hole or a trench can cover be obtained from those that burst on the ground.

Anything that is bullet-proof should be proof against fragments or pellets of shells which burst in the air.

Houses, *if they cannot be seen by the enemy*, will probably not

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be struck by unburst shells, and they should be able to keep out pieces of burst ones.

The lower rooms are the safer, as the roof is not proof.

Houses which can be seen by the enemy are death-traps. *It is safer to lie in the gardens a yard or two behind them.*

To obtain cover from a bullet is comparatively easy, as its course is fairly flat, like the rays of a searchlight.

To escape from pieces of burst shells is far harder, and to do so one must lie very close to the cover, as they descend almost vertically, like driven rain.

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